

# **I. Adequacy of Payments Relative to Costs and Implications for Maryland Health Care Providers**

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Maryland Health Care Providers**

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# Adequacy of Payments Relative to Costs and Implications for Maryland Health Care Providers

## Executive Summary

### **Purpose and Background**

This report reviews evidence on trends in cost and income of health care practitioners (including physicians and other licensed professionals whose services may sometimes substitute or complement physicians' services), assesses payment adequacy in the State of Maryland, and reviews evidence on practitioner income and supply in Maryland. This report was prepared in response to legislation (House Bill 805 – 2002 Maryland General Assembly) that called for a study to address adequacy of practitioner payments and ongoing interest in the economic environment facing providers and potential effects on access in the State of Maryland.

In recent years, physician practices have seen increased economic pressures as revenue per service has stagnated but costs continue to rise. Nationwide, private insurers' physician fees fell slightly, on average, from 1994 to 2001, due mainly to the growth of lower-paying managed care plans. Medicare physician fees roughly paced inflation between 1994 and 2001, fell by over 5 percent in 2002, and will rise by 1.5 percent in 2004 and 2005. Most recently, physicians' malpractice premiums seem to have entered the rapidly rising portion of their actuarial cycle, bringing the issue of a "malpractice crisis" to a level of visibility not seen since the similar period of rapidly rising malpractice premiums that occurred in the mid-1990s. Given this environment, it is not surprising that physicians' real incomes have declined modestly nationwide, and their willingness to accept indigent or low-paying patients has weakened somewhat. In Maryland, claims data show that average private rates did not increase from 1999 through 2001. Thus, Maryland physicians plausibly may be facing the same type of cost and income pressures that have been demonstrated nationwide.

### **Methods**

Data on trends in the cost of practice facing health care practitioners were reviewed for practitioners nationwide and, in Maryland, with a focus on labor cost and the cost of malpractice insurance. Labor expenses comprise a large portion of cost and tend to increase relatively rapidly over time. Although the cost of malpractice insurance is not a significant portion of the cost of practice for many physicians, especially non-surgical specialists, this cost can be volatile and tends to be cyclical, with alternating periods of increasing and decreasing premiums.

Physician ownership or partnership blurs the distinction between *cost* and *income* in any discussion of payment for practitioners' services. When practitioners are owners of, or partners in their practices, the difference between total payment to the practice and the total overhead cost of running the practice becomes the practitioner's income. Thus, for

the typical physician practice, it is not possible to compare insurers' payment rates to some well-defined "total cost of care" but rather, whether payers' rates are sufficient to cover the average overhead cost of providing a procedure is addressed using estimates of the cost of practice and volume of services measured by relative value units (RVUs) and data from Maryland claims.

The extent to which Maryland private payers tend to pay non-physician practitioners at rates that are lower than physician rates for comparable services is examined using a ratio of the total of payments to the non-physician practitioner relative to the total of payments that would have been received by the average physician providing the same set of services. Whether HMO payers follow the existing law mandating payment at 125 percent of in-network rates for services provided by out-of-network physicians was examined using Maryland claims.

Finally, we reviewed trends in practitioners' income and practitioner supply. Income data were reviewed from surveys of practitioners, employers, and from the U.S. Census. Data on practitioner supply were obtained from professional organizations and licensure agencies.

## **Findings**

Representative data on the current cost of practice facing health care practitioners is scarce. Nevertheless, evidence suggests that professional expense – defined as the total cost of practice less current and deferred earnings of the practitioner – has been increasing modestly in Maryland since 2000. While the cost of practice varies by specialty (i.e., surgical specialists tend to have higher costs than primary care specialists), the professional expenses of the average physician nationwide increased by about 9 percent per year between 1994 and 1998 and declined somewhat between 1998 and 2000. Since 2000, data used by the Centers for Medicare and Medicaid Services (CMS) suggests that professional expense has increased by about 2 percent per year, and that professional expenses are greater for physicians in Baltimore and the Maryland counties contained in the Washington, DC metropolitan area than for the average U.S. physician.

At the same time, a closer look at the labor and malpractice components of professional expenses using data from other sources suggests that professional expenses may be rising more rapidly than suggested by CMS. While most evidence indicates that nurses' earnings were not rapidly increasing in the late 1990s, some evidence from the U.S. Bureau of Labor Statistics and an annual survey of Maryland hospitals suggests that nurses' wages have risen rapidly since 2000 and that wage levels are higher in Maryland than in other parts of the country. Evidence from the same sources indicates that the cost of other types of labor employed by practitioners has also increased rapidly in recent years.

Malpractice premiums exhibit volatility and cyclical patterns because premiums can be kept low when high investment income offsets expected losses but losses can increase over time and ultimately require large "catch-up" increases in premiums. Differences in absolute levels of premiums and volatility are exhibited across states because of differences in the insurance market and regulatory environments. Some states have

imposed limits in liability and claim that these limits have helped in keeping premiums lower than they would have been otherwise. Comparisons of premiums from expense surveys are also problematic because in addition to differences due to regulatory and legal environments, providers purchase different kinds of coverage, e.g., with different limits of liability and protection, and these differences may not be controlled for in the reporting of expense estimates.

In spite of these caveats, evidence from the last several years suggests that annual premium increases have been large. However, how malpractice insurance premiums in Maryland compare with malpractice premiums elsewhere is difficult to determine. Data provided by a Maryland insurer on premiums for several years and for a variety of specialists reveal that premiums for Baltimore City and Baltimore County internists and obstetricians and gynecologists in 2002 were greater than for corresponding specialists nationwide. In contrast, this data shows that the premium for Baltimore City and County (the highest in Maryland) for general surgeons was less than the premium for general surgeons nationwide. Rates of increase for internists and general surgeons were somewhat larger in Maryland than for the nation as a whole in 2001, but not in 2002 – possibly indicative of the cyclical nature of malpractice premiums.

The cost of uncompensated care is included in the cost of providing practitioner services. Analysts attempt to distinguish between the components of uncompensated care; bad debt refers to patient charges expected to be but never received from patients, and charity care refers to care provided free or at reduced fees due to a patient's financial constraints. Limited evidence suggests that charity care provided by physicians has decreased over the last decade. The mean number of hours of charity care *per month* was 11 in 2002 (similar in magnitude to an estimate for 2001), versus 7 hours *per week* in 1988. The authors are aware of no evidence, representative of Maryland physicians or other practitioners, suggesting that Maryland physicians differ from average practitioners nationwide with respect to the provision of charity care or bad debt.

In 2002, average payments from Medicare and private insurers (HMO and non-HMO) substantially exceeded the non-physician cost of practice, defined in this analysis as fully-allocated overhead and malpractice insurance costs, but excluding the physician's own income or the salary and benefits paid to the physician. This payment-cost differential existed despite private insurance payment rates in Maryland that were substantially below the U.S. average. While Medicaid payments, by contrast, were quite close to cost on average, payments exceeded costs for visits but were substantially below costs for all other types of care.

The gap between payment and the overhead cost of running a practice is smallest for primary care physicians, larger for medical specialists, and largest for surgeons. This mirrors what is known about the relative incomes of these specialty groups, and is generally consistent with the variation in the payment-to-cost ratio by type of service. For Medicare and private payers, the markup of payment over the average overhead cost for cognitive services remains far smaller than the markup for procedures and tests. For Medicaid, the situation is reversed. With its (relatively) higher rates for visits (and much lower rates for all other services), the variation in payment-to-cost ratios was far lower than for Medicare and private payers.

The degree of financial stress faced by the practice appears to depend on physician specialty and payer mix. An increase in the Medicaid or charity care caseload narrowed the gap between payment and average overhead cost. We estimated that a practice that begins with no Medicaid patients and then assumes a Medicaid caseload of one-third of the practice total would have reduced the physician's net income by about 27 percent.

Almost nothing is known about the practice costs of non-physician practitioners except that they generally face lower malpractice insurance costs. Analysis of payment, by contrast, shows that private payers typically pay non-physician practitioners payments that are modestly to substantially below levels paid to physicians. This is largely in contrast to Medicare's payment policy where, with a few notable exceptions, Medicare pays the same rate to all providers qualified to provide a given medical service.

Maryland already has certain minimum payment laws in force for care delivered to HMO enrollees by non-participating physicians. With some caveats, our analysis suggests that HMOs were not routinely complying with these minimum payment rates and that the rate of compliance does not appear to be increasing. But, on average, the gap between HMO payments and the estimated statutory minimum payment was not large, and total payments for these services would increase only modestly, on average, under strict enforcement of existing law. An alternative payment floor based on Medicare rates would be easier to enforce, but would provide dramatically different levels of payment support than does the current floor. In particular, for emergency room visits (the service provided most frequently by non-participating physicians), Medicare rates are far below typical private rates, and a floor based on 125 percent of Medicare's rate would appear to be much less stringent than the current payment floor.

Data on practitioner income from a variety of sources were examined. With respect to physicians, data suggests that income varies more by specialty than geographic location. While some evidence suggests that income of Maryland physicians may be somewhat less than for the average U.S. physician, data also implies that Maryland incomes have increased faster than in neighboring states. Given the large supply of physicians in Maryland relative to other states, there appears to be little cause for concern about the adequacy of physician supply and out-migration to neighboring areas. There is much less information available on earnings of other practitioners. Available information for podiatrists, chiropractors, physician therapists, and physician assistants, however, indicates that Maryland incomes are sometimes larger and sometimes less than nationally, but are generally comparable to national means.

## **Conclusions**

Two caveats may affect conclusions of this study. First, much of the study's focus is on physicians – not because an understanding of trends in cost and incomes and payment adequacy of other health care providers is of less importance, but because data on cost and revenue for non-physician practitioners are scarce or nonexistent in a form from which generalizations or inferences for policy purposes can be drawn. Second, data on physicians themselves – especially that which are representative of patient care physicians in Maryland – are not as current or plentiful as might be expected.

Payments from private payers in Maryland and from the Medicare program appear adequate in covering the cost of care, where the minimum standard of adequacy applied here is that payments are at least high enough to cover average overhead costs of providing physician care. This is a minimum standard because the cost calculation excludes the physician's income or salary. But even by this minimal standard, Medicaid payments overall are not adequate. Medicaid payments are often not sufficient to cover average non-physician expenses, especially for tests and procedures. Private and Medicare payment levels must cross-subsidize Medicaid services at current payment levels. This analysis validates ongoing concern about adequate practitioner participation in the Medicaid program, and suggests that any large increase in Medicaid participation might be difficult to achieve without bringing Medicaid rates more in line with other payers' rates in Maryland.

Another implication is that payment adequacy and indicators of access, such as utilization and provider incomes and supply, should be monitored over time. Evidence presented in this study suggests that professional expense will, at best, remain stable but at worst will increase in the near future as the cost of labor increases and malpractice premiums increase. While practitioner income and supply trends do not present cause for immediate alarm, this may change if payment rates decline and the cost of practice increases.

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## 1. Introduction and Background

In recent years, U.S. physician practices have seen increased economic pressures as revenue per service stagnated while costs continued to rise. Private insurers' physician fees fell slightly, on average, from 1994 to 2001, due mainly to growth of lower-paying managed care plans.<sup>1</sup> Medicare's physician fees roughly paced inflation from 1994 to 2001, then fell 5.5 percent in 2002. The Medicare Economic Index (MEI, a measure of inflation in physicians' per-unit costs) rose 2 to 3 percent annually from 1994 to 2002. Most recently, physicians' malpractice premiums seem to have entered the rapidly rising portion of their actuarial cycle, bringing the issue of a "malpractice crisis" to a level of visibility not seen since the similar period of rapidly rising malpractice premiums that occurred in the mid-1990s.

Given this environment, it is not surprising that physicians' real incomes have declined modestly nationwide, and their willingness to accept indigent or low-paying patients has weakened somewhat. Real (inflation-adjusted) physician income fell 5 percent from 1995 to 1999, in contrast to the upward trend in prior years and to the 3.5 percent increase in real income for other professional and technical workers over the same period.<sup>2</sup> The increased prevalence of managed care appears to have led to reductions in charity care and acceptance of Medicaid patients in physician offices.<sup>3</sup>

In Maryland, claims data show that average private rates did not increase from 1999 through 2001.<sup>4</sup> Thus, Maryland physicians may plausibly be facing the same type of cost and income pressures that have been demonstrated nationwide. The Maryland General Assembly has shown ongoing interest in the adequacy of physician payments and in access to physician care. Its main response has been to regulate billing and payment practices when physicians have no choice about accepting patients. In Maryland, physicians cannot balance-bill HMO patients treated out-of-network, and 2000 legislation required HMOs to pay nonparticipating physicians at least 125 percent of the rate paid to participating physicians. In 2001, Senate Bill 728 set floor payment rates for HMO payment to nonparticipating trauma physicians at 140 percent of Medicare's rates (and to other nonparticipating physicians at 125 percent). In 2002, House Bill 805 clarified that geographic areas over which the 125 and 140 percent thresholds were to be set must conform to geographic localities defined by the Centers for Medicare and Medicaid Services (CMS). This legislation also calls for a study addressing the adequacy of practitioner payments. Most recently (Senate Bill 479), Maryland began development of an uncompensated care pool for physician trauma care.

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<sup>1</sup> Hogan C, "Trends in Medicare Physician Fees Compared to Private Rates," presentation at the Academy Health Annual Meetings, Nashville, TN, June 2003.

<sup>2</sup> Reed MC, Ginsburg PB, "Behind the Times: Physician Income, 1995-99", Center for Study of Health System Change Data Bulletin No. 24, Washington: The Center, March 2003.

<sup>3</sup> Cunningham P, *Mounting Pressures: Physicians Serving Medicaid Patients and the Uninsured, 1997-2001*, Tracking Report No. 6, Center for Studying Health System Change, Washington, D.C., December 2002.

<sup>4</sup> Maryland Health Care Commission (MHCC). *Practitioner Utilization: Trends Within Privately Insured Patients*. Baltimore: MHCC, 2003.

The relevant sections of HB 805 demonstrated the legislature's ongoing concern with Maryland residents' access to high-quality health care services. In the short run, the recent pattern of no or small increases in payment rates, coupled with rising costs, might deter physicians and other providers from taking charity care or providing care under relatively low-paying plans such as Medicaid. Over the longer term, the financial attractiveness of professional practice in Maryland, relative to its neighbors and to the U.S. as a whole, might influence practitioners' willingness to locate in Maryland or to relocate outside of Maryland. Any current financial stress on Maryland practitioners could eventually translate into a reduced supply of practitioners to care for the Maryland population and ultimately into reduced access to care and poorer health status for the Maryland population.

### **Purpose and Organization of the Study**

The purpose of this report is to review evidence on trends in cost and income of health care practitioners, including physicians and other licensed professionals whose services may sometimes substitute or complement physicians' services, and to assess payment adequacy in the State of Maryland. Evidence for the U.S. is presented to provide context for what is known and not known about health care providers in the State of Maryland. The report also addresses evidence on uncompensated care and trends in the supply of providers – dimensions of the provision of health care that, as barometers of access, should be monitored over time.

In the next section (Section 2), trends in the costs of practice are reviewed. Special attention is devoted to the costs of labor and malpractice insurance. We also summarize evidence on the provision of uncompensated care. The cost of uncompensated care and bad debts are included in the cost of practice and by definition must factor into measures of payment adequacy. A key issue – whether current payments are sufficient to cover the costs of care – is addressed in Section 3. Estimates of service costs are compared with estimated payment rates from private payers and from the Medicare and Medicaid programs. Payments to non-physician providers are compared with payments to physicians, and estimates of the fraction of HMO bills exceeding the 125 percent threshold are also tabulated. Finally, we review evidence on trends in net income and the availability of medical providers in Section 5. The report concludes with a discussion of implications.

At this point, it is prudent to mention several caveats. First, much of the focus of this report is on physicians. This focus is not due to a belief that an understanding of trends in cost and incomes and payment adequacy of other health care providers is of less importance. Rather, data on these aspects of practice for non-physicians are scarce or not existent in a form from which generalizations or inferences for policy purposes can be drawn. Second, data on physicians themselves are not as current or plentiful as might be expected. The primary source of data on physician practice expenses and income is the American Medical Association's (AMA's) Socioeconomic Monitoring System (SMS). The SMS was compiled from a nationally representative sampling frame of U.S. physicians. Until 1999, SMS surveys collected data on physician cost, income, and practice arrangements on an annual basis. The survey was discontinued for the year 2000 (when data from 1999 would have been collected); a scaled-back version was

implemented in 2001. Data from the AMA are supplemented with data from the Medical Group Management Association (MGMA) Physician Compensation and Production Survey for recent years, but these data are not directly comparable to AMA data because MGMA data represent group practices that are members of the Association – a population that differs from the population represented by the AMA SMS. We also use data from CMS and other sources to help draw inferences about cost trends since the year 2000 and to address current adequacy of payments in Maryland. Finally, it must be emphasized that data that represent providers in the State of Maryland are scarce. Data from the AMA and MGMA cannot be used to produce reliable estimates for providers in the state. Hence, we report estimates for the Census region containing the State of Maryland as estimates that may be suggestive of Maryland providers and we supplement these with data from other sources, such as from a Maryland malpractice insurance vendor and from the U.S. Census for 2000.

## **2. Cost of Practice**

A variety of resources are used to produce health care services. For physician services, clinical inputs include the physician's time and effort and the time and effort used by other non-physician labor to supplement or complement the physician's work. Other clinical inputs include medical equipment and supplies. Non-clinical inputs are also necessary in the provision of physician services, including office space, labor, and office supplies. The clinical versus non-clinical distinction applies to non-physician providers as well. For these providers, clinical inputs include those inputs used to deliver health care services (e.g., professional labor and medical space and equipment), while non-clinical inputs include those that support administrative and clerical functions.

Using terminology that evolved with the Medicare Program's Physician Fee Schedule for physicians and other non-physician (non-institution) providers who receive payments under the program, the cost of these inputs can be categorized under three headings – *physician work*, *practice expense*, and *professional liability insurance expense*. Physician work includes the earnings of the physician or other provider, in the forms of both immediate salary or earnings, and deferred compensation. Practice expense includes expenses associated with all other – both clinical and non-clinical – labor, office space, and medical and non-medical equipment and supplies. Non-physician labor expenses include wages, salaries, and deferred compensation. Expenses (e.g., for space, medical equipment, office furniture and supplies) are incurred through direct purchase or lease. Finally, the professional liability insurance expense component includes the malpractice insurance premium as well as any contributions to state insurance funds or other expenses associated with insurance for malpractice incurred by the physician. These categories can be refined to readily apply to non-physician providers who are not eligible to receive Medicare payments.<sup>5</sup>

Although health care providers may not think of incurring cost defined in terms of work, practice expense, and professional liability, information on cost – at least for physicians –

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<sup>5</sup> For non-physicians, the work component would refer to compensation of the primary health care provider (e.g., therapist or social worker), and practice expense would refer to other inputs, including supportive professional and clerical labor. There may or may not be a significant professional liability component to cost, depending in part on provider type.

has been reported in this manner because this categorization has been used directly to calculate Medicare payments.<sup>6</sup> A cost-accounting of the average physician's practice (based on data from 1996) is displayed in Table 1. According to these data, the cost of physician labor was about 54 percent of the cost of practice in 1996, and practice and professional liability expenses accounted for about 42 percent and 3 percent, respectively, of the cost of medical practice (Table 1). This means, for example, that the average self-employed physician in 2000 incurred \$228,984 in practice expense, \$17,016 of professional liability coverage expense, and was left with \$294,184 of earnings and deferred compensation.<sup>7</sup>

**Table 1. Composition of the Cost of Medical Practice  
as Measured by the Medicare Economic Index**

	<b>Base-Year Percent</b>
<b>Physician Work</b>	54.46
<b>Wages &amp; Salaries</b>	44.20
<b>Benefits</b>	10.26
<b>Practice Expense</b>	42.39
<b>Non-Physician Labor</b>	16.81
<b>Wages and Salaries</b>	12.42
<b>Benefits</b>	4.39
<b>Office Expenses</b>	11.58
<b>Materials &amp; Supplies</b>	4.52
<b>Medical Equipment</b>	1.88
<b>Other Professional Expenses</b>	7.60
<b>Professional Liability Insurance Expense</b>	3.15
<b>Total</b>	100.00

Note: Base-year percents are for 1996, described in *Federal Register*, November 2, 1998.

Source: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group, [www.cms.hhs.gov/statistics/health-indicators/t13.asp](http://www.cms.hhs.gov/statistics/health-indicators/t13.asp).

<sup>6</sup> Physician work, practice expense, and professional liability are the three parts of Medicare payments. The fee for each service is a sum of three resource-based relative values. Each relative value corresponds to a type of cost, and is weighted according to its importance. The percents in Table 1 are the weights for the cost components, to be used until 2004 when payments are to be re-weighted, based on more current data.

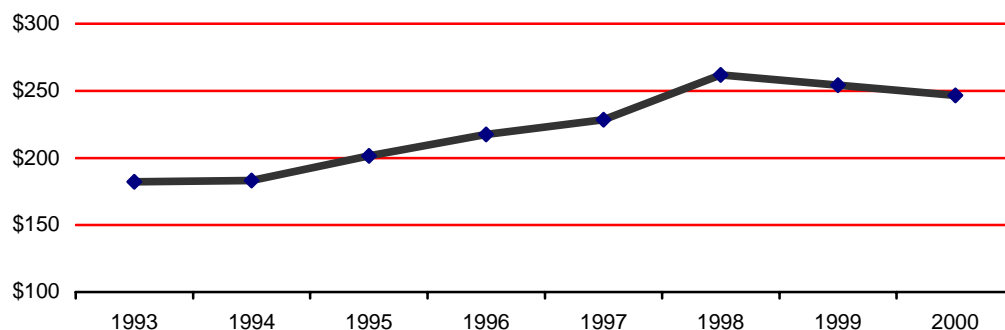
<sup>7</sup> This decomposition is based on \$246,000 of cost, covering both practice expense and malpractice insurance cost components, as reported by the American Medical Association for the year 2000 and discussed below (AMA, *Physician Socioeconomic Statistics*. Chicago: AMA, 2003). This calculation is also based on the assumption used by under the Medicare payment methodology that the composition of cost in 2000 was the same as in 1996.

In 1996, over half of the cost of the physician's practice was physician work. Physician work was approximately 54 percent of the cost of practice. Most of the cost attributed to the physician is in the form of wages/salaries, with about 19 percent of this amount consisting of deferred compensation (10 percent of total cost). The largest portion of practice expense is the cost of non-physician labor. Non-physician wages and salaries accounted for about 12 percent of total cost (29 percent of practice expense). Data from CMS indicate that nurses account for the largest share – 5.7 percent of non-physician wages and salaries. Managers account for 2.4 percent of non-physician wages and salaries, and other employees, e.g., clerical and service personnel, account for the remainder (4.4 percent). Next to labor expense, the cost of office space is the largest component of practice expense. The cost of office space represented over a quarter of practice expense and about 12 percent of the total cost of practice in 1996.

### Professional Expenses

To understand the cost of practice and its trends, it is useful to review cost data in more detail. As noted above, much of the evidence on cost is for physicians, collected by the AMA as part of its SMS. Even though data from the AMA's SMS were used to define the three cost categories discussed above, the AMA's published trend data are on "professional expenses." "Professional expenses" as defined by the AMA include *all* non-physician costs of practice, i.e., the sum of practice expense and professional liability expenses, excluding physician work. Examination of trends in the cost of medical practice reveals that although cost has increased over the long run, cost has decreased in recent years. Figure 1 displays professional expenses of the average self-employed physician, 1995-2000, as reported by the AMA SMS.<sup>8</sup>

**Figure 1.**  
**Professional Expenses of Self-Employed Physicians, 1993-2000,**  
**\$000s**

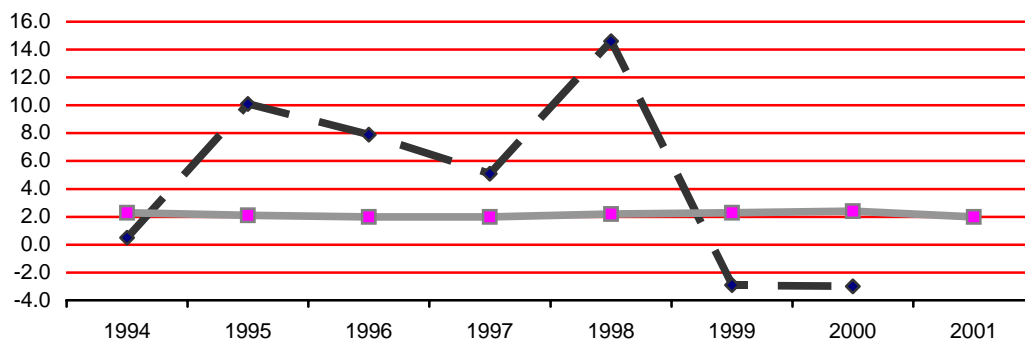


In 2000, professional expenses of the average self-employed physician were \$246,600. In general, these expenses increased between 1993-94 and 1998 by about 43.7 percent or 8.7 percent per year on average (from \$182,200 to \$261,900 in current year dollars). By

<sup>8</sup> As noted above, the SMS survey was not conducted for 1999. In the figures displayed in the text based on SMS data, values for 1999 have been imputed linearly between the reported values for the years 1998 and 2000.

the year 2000, expenses declined for the average self-employed physician by about 5.8 percent or 2.9 percent per year (from \$261,900 to \$246,600). Annual percentage rates of change in professional expenses are displayed in Figure 2. The Medicare Economic Index (MEI), the index measure of input prices used by the Centers for Medicare and Medicaid Services (CMS) as part of its annual update of the Medicare Fee Schedule is also displayed in Figure 2.<sup>9</sup> For most of the period 1994-2000, cost increases as measured by the AMA data for self-employed physicians have exceeded CMS' estimate of the change in the cost of medical practice.<sup>10</sup>

**Figure 2.**  
**Percent Change in Professional Expenses of Self-Employed Physicians and the Medical Economic Index, 1993-2000, \$000s**



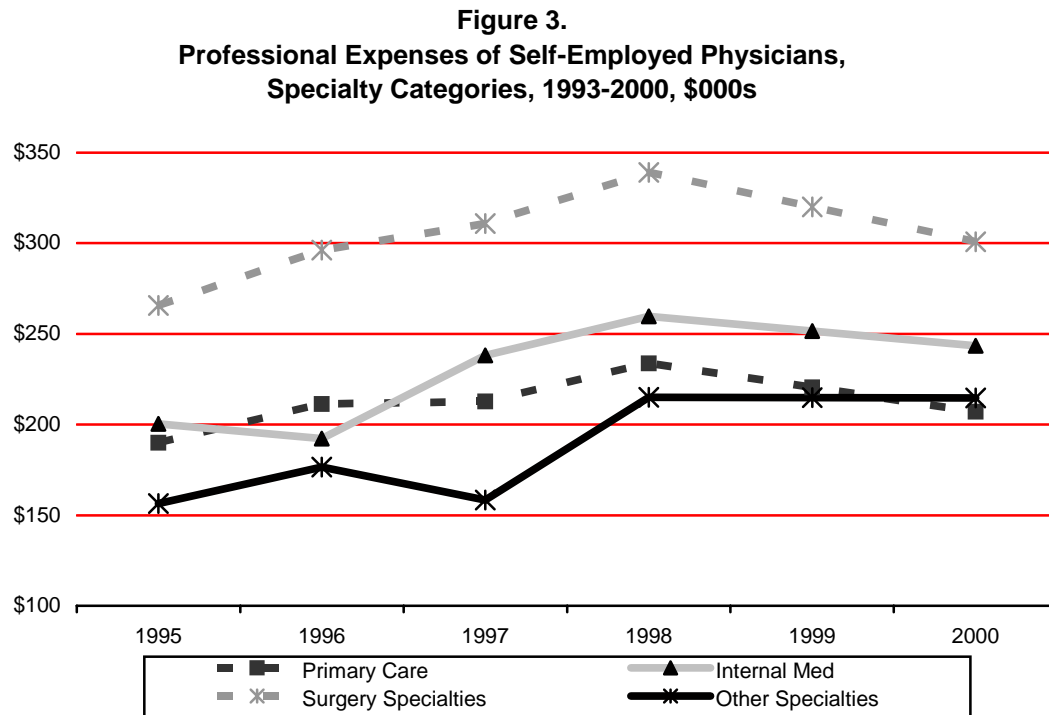
Although data on the average physician are useful in depicting the trend of cost, these data hide differences in the levels of cost and changes over time for self-employed physicians of different specialties. Professional expenses in 2000 were highest for surgical specialists, \$300,800, and lowest for “other” specialists (including neurologists, dermatologists, emergency medicine specialists, and others), \$156,400. Expenses for self-employed primary care physicians – defined as general/family practitioners and pediatricians – were \$207,200, 69 percent of the level for surgeons.

The largest increase in professional expenses during 1995-2000 was for “other specialists,” 37.2 percent. The smallest increase was for primary care physicians, 9.1 percent. Most of the increases in expenses for each specialty group occurred between

<sup>9</sup> The MEI has been used to affect program payments since 1975, but has undergone several revisions in its structure (Freeland, MS, et al., “Measuring Input Prices for Physicians: The Revised Medicare Economic Index,” *Health Care Financing Review*, 12 (Summer 1991), 61-74. But the MEI is only one determinant of the annual Medicare physician fee update. Other determinants include growth in program enrollment, real Gross Domestic Product per capital, and the Sustainable Growth Rate, a measure based on targeted program spending. See Chapter 8, “Reviewing the Estimated Payment Update for Physician Services,” in Medicare Payment Advisory Commission (MedPAC), *Report to the Congress: Medicare in Rural America*, Washington, DC: June 2001, pp. 125-131.

<sup>10</sup> We would expect the AMA series (professional expenses) and the CMS series (representing a measure of per-unit cost, adjusted for economy-wide productivity gains) to diverge somewhat. The former incorporates costs associated with growth in total number of services produced by the typical physician practice over this period; the latter incorporates CMS's productivity adjustment, which reduces the MEI below the rate of inflation in wages, rents, and other factors affecting the cost of practice.

1995 and 1998 (the pattern that underlies the pattern displayed in Figure 1 for the average physician). By the year 2000, professional expenses had declined from their 1998 levels for all specialty groups.



As indicated above, there are no national data on professional expenses comparable to those from the AMA SMS for years since 2000. Projections by CMS staff, however, suggest that professional expenses have and will continue to increase but at modest rates nationwide. Practice expense increased by 2.2 percent in 2001-02 and is expected to increase 1.8 percent between 2003 and 2004 as measured by CMS (Table 2). (Note that these rates of increase do not include and do not exceed growth rates for physician work.) If tabulated growth rates for practice expense and professional liability cost are combined to obtain rates of increase for professional expense (as previously monitored by the AMA), expected rates of increase for the periods 2001-02, 2002-03, and 2003-04 are 2.4, 1.7, and 2.0 percent, respectively.<sup>11</sup>

Reliable data on the costs of practice are not available for the State of Maryland. Data on professional expenses from the AMA cannot be used to produce reliable estimates for most states, including the State of Maryland. However, AMA data do support estimates for Census divisions, and these estimates suggest that professional expenses facing Maryland physicians may be higher than for the average physician nationwide.

<sup>11</sup> These percents are weighted averages of the practice expense and professional liability percents in Table 2, using the corresponding percents in Table 1 as weights for each period.

**Table 2. Percent Growth in the Components of the Cost of Medical Practice, 2001-2004.**

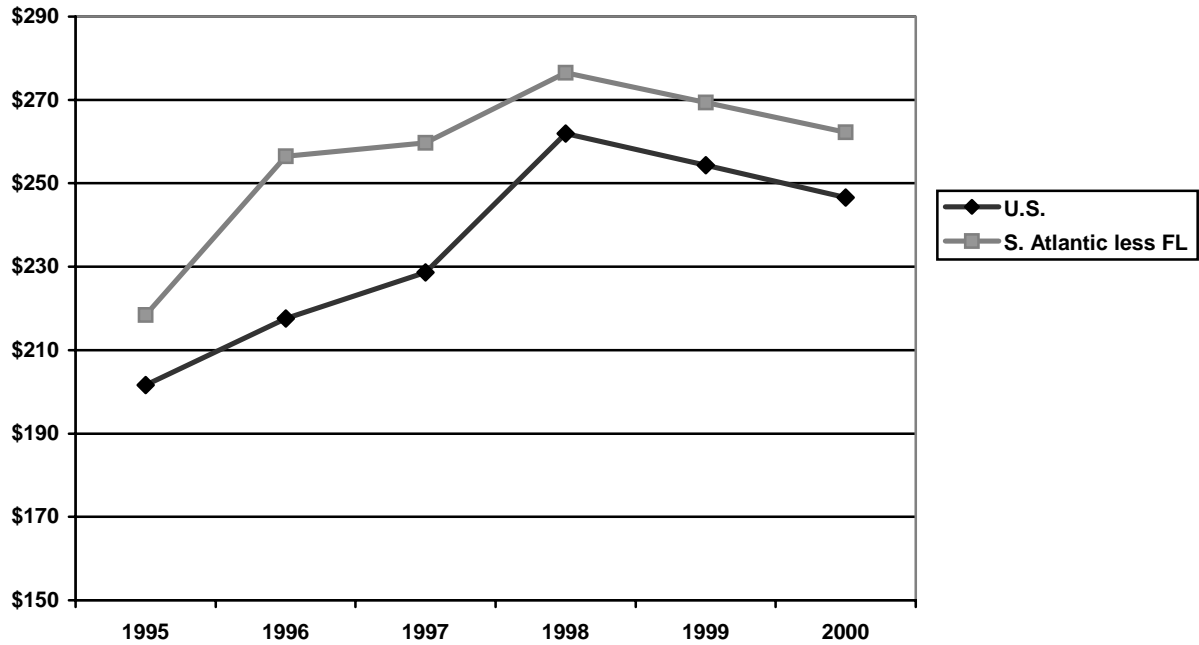
	<u>Percent Growth</u>		
	<u>2001-02</u>	<u>2002-03</u>	<u>2003-04</u>
<b>Physician “Work”</b>	2.6%	1.9%	2.5%
<b>Wages &amp; Salaries</b>	2.1	—	—
<b>Benefits</b>	3.9	—	—
<b>Practice Expense</b>	2.2	1.7	1.8
<b>Non-Physician Labor</b>	2.6	2.4	2.4
<b>Wages and Salaries</b>	2.2	2.2	2.3
<b>Benefits</b>	3.8	--	--
<b>Office Expenses</b>	1.4		
<b>Materials &amp; Supplies</b>	0	—	—
<b>Medical Equipment</b>	1.0	—	—
<b>Other Professional Expenses</b>	1.0	1.6	1.4
<b>Professional Liability Insurance Expense</b>	5.5	2.0	4.5
<b>Total (MEI)</b>	2.3	2.0	2.2

Notes: Growth percents for 2002-2003 are based on forecasts; dash indicates that value is not available.  
Source: Indices used to calculate percents are components of the MEI for 2001-2004, reported in tabular form by CMS, Office of the Actuary, [www.cms.hhs.gov/statistifcs/health-indicators/t13.asp](http://www.cms.hhs.gov/statistifcs/health-indicators/t13.asp), citing the *Federal Register*, November 2, 1998.

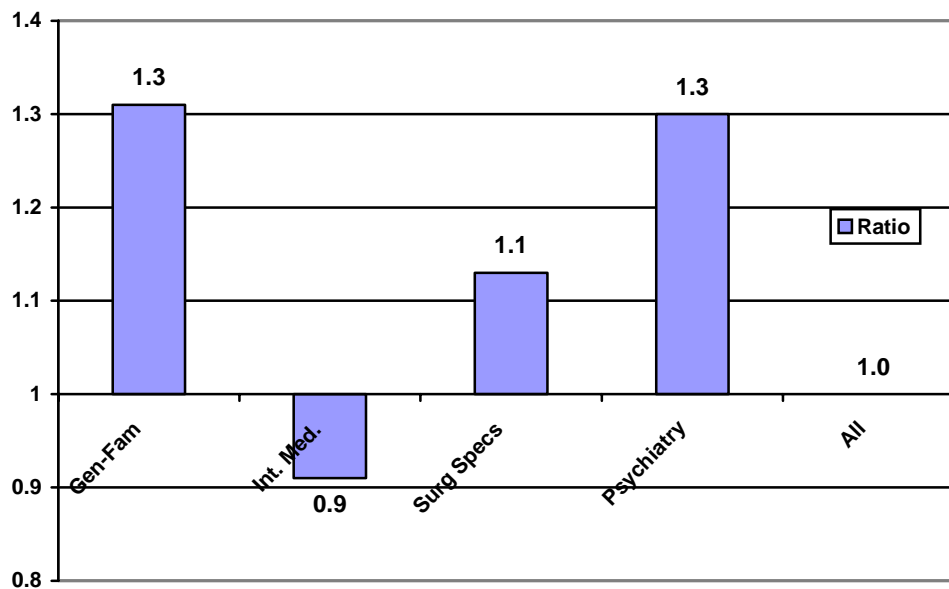
Professional expenses for the average physician in the South Atlantic region, less Florida, were \$262,200 in 2000 versus \$246,600 for U.S. physicians overall. The average physician practicing in a South Atlantic state, other than Florida, faced higher professional expenses than the average physician nationwide since 1995 (Figure 4). But evidence also suggests that the relationship between expenses facing Maryland physicians relative to the nation overall varies by specialty. In 2000, expenses facing general and family practitioners were about 30 percent higher in the South Atlantic Census division than for the average U.S. general or family practitioner (Figure 5). By contrast, internal medicine specialists in the South Atlantic Census division faced costs that were less than 90 percent of the national average for these specialties.<sup>12</sup>

<sup>12</sup> The ratio for all physicians in Figure 5 is close to very close to one -- \$247,700 for South Atlantic physicians, divided by \$246,600 for U.S. physicians – even though this difference is not visually apparent. In contrast to the data underlying Figure 4, data underlying Figure 5 are for the South Atlantic states *including* Florida. Data for specialties reported in Figure 5 are not available for the South Atlantic states *excluding* Florida.

**Figure 4. Mean Professional Expenses of Self-Employed Physicians, 1993-2000, U.S. and South Atlantic Region, \$000s**



**Figure 5. Ratio of Mean Professional Expenses of Self-Employed Physicians, South Atlantic Region Relative to U.S., Selected Specialty Groups, 2000**



It is of interest to note that CMS recognizes that there are cost differences between Maryland versus elsewhere in the U.S., and across the three Medicare payment areas recognized by CMS. Medicare payments are currently adjusted for geographic

differences in the cost of practice using the Geographic Practice Cost Index, or GPCI. Each of the three components of the Medicare Fee Schedule – physician work, practice expense, and malpractice insurance expense – is adjusted for geographic location of the provider. The portion of the Medicare payment attributable to practice expense in Maryland counties that are part of the Washington, DC metropolitan area – Montgomery, Prince Georges, and Howard Counties – is 16 percent higher than the national average to reflect relative geographic differences in practice expense (Table 3). In the same manner, the GPCI practice expense adjustments increase the practice expense portion of Medicare payments by about 4 percent for physicians in Baltimore and surrounding counties. Payments to Maryland physicians in other, more rural counties of Maryland are lower than the national average, as CMS views practice expenses in these areas to be about 1.5 percent lower (the practice expense GPCI for the “rest” of Maryland is 0.985, compared to the national average index value of 1.000).<sup>13</sup>

***Components of expenses: labor.*** While there is little information on the total cost of practice nationwide and for the State of Maryland for recent years, it is helpful to review information on trends in the components of the cost of providing health and medical care. Information on component cost trends may be helpful in anticipating more general trends that have not been directly measured. As noted above (discussion and Table 1), the largest component of practice expense (for physicians) is the cost of labor. Labor costs include wages and salaries of office employees and the cost of benefits for these employees. In 1996, labor expenses accounted for about 40 percent of practice expense. Labor costs are probably a significant component of the cost of non-physician practitioner services as well, although there are little data to support this supposition.

Evidence suggests that the cost of nurses employed in physicians’ offices did not increase significantly during the early 1990’s. The current-dollar nurse’s wage increased by 11 percent (from \$37,738 to \$42,071) between 1992 and 1996. Yet, according to the Health Resources and Services Administration’s (HRSA’s) National Sample Survey of RNs, the average nurse’s salary decreased in real terms by as much as 0.3 percent between 1992 and 1996.<sup>14</sup> Data on hourly wages indicate an increase of less than 1 percent between

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<sup>13</sup> The “geographic adjustment factor,” or GAF, was developed in attempts to simplify analysis of the effects of geographic adjustment of payments. The GAF is defined for each payment area as a weighted average of the three GPCI values for the area, with weights equal to the national average shares of the cost of resources accounted for by the physician’s own time and effort, practice expense, and the malpractice insurance premium. Thus, the GAF is a one-measure summary of the three-GPCI set that applies to each market. Medicare payments to providers in the Maryland counties of the DC metropolitan area are about 10 percent higher than the U.S. average due to geographic differences, whereas payments in less urban Maryland counties are about 3 percent less than the U.S. average because of geographic differences in cost components. To the extent that the GAF is a valid measure of geographic differences in the costs of practice, the GAF is a measure of how costs in Maryland compare to costs in the U.S.; the GAF for 2002 ranged from 0.889 (for the Arkansas payment area) to 1.221 (Manhattan and San Francisco).

<sup>14</sup> HRSA, *The National Sample of Registered Nurses, March 2000: Preliminary Findings*, February 2001, and Chiha YA and Link CR, “The Shortage of Registered Nurses and Some New Estimates of the Effects of Wages on Registered Nurses Labor Supply: A Look at the Past and a Preview of the 21<sup>st</sup> Century,” *Health Policy*, 64 (June 2003), 349-375. Prices as measured by the Consumer Price Index (CPI) increased by about 12 percent during this period, so the real salary for 1992 (in 1996 dollars) was about \$42,203.

1993 and 1996 (from \$18.03 to \$18.16).<sup>15</sup> Finally, data from the U.S. Census indicate that real wages for nurses fell 1.5 percent between 1994 and 1997 (from \$19.45 to \$18.61, 1997 dollars).<sup>16</sup>

**Table 3. Geographic Practice Cost Index Values for Maryland Medicare Payment Areas, 2002.**

Payment Area	<u>Geographic Practice Cost Index Components</u>			GAF
	Physician Work	Practice Expense	Malpractice Expense	
<b>MD Counties in DC metro area</b>	1.050	1.164	0.970	1.095
<b>Baltimore and Surrounding cos.</b>	1.020	1.038	1.007	1.025
<b>Rest of MD</b>	0.985	0.979	0.820	0.972

Source: Addenda E and F, HCFA, *Federal Register*, November 1, 2000.

Data from the most recent U.S. Census suggest that nurses' wages were not increasing by 1999. Mean earnings for RNs were \$35,260.<sup>17</sup> Median earnings for RNs were \$40,000, meaning that half of RNs earned more than \$40,000. (Mean and median earnings for licensed practical nurses (LPNs) and licensed vocational nurses were \$22,207 and \$22,000, respectively.) The average salary reported by the HRSA survey increased to \$46,782 in 2000, an increase in real dollars of over 2 percent since 1996. U.S. Census data indicate that nurses' earnings were somewhat higher in the State of Maryland than elsewhere in 1999. Mean earnings of RNs and LPNs were 6 and 22 percent greater than for the U.S. overall (\$37,388 and \$26,998, respectively).

A somewhat different picture of nurses' earnings in the U.S. and Maryland emerges from the U.S. Bureau of Labor Statistics' Occupational Employment and Wage Estimates (OEWE) and from the annual survey of Maryland hospitals. The OEWE estimates are from surveys of employers, whereas the U.S. Census estimates are based on self-reported estimates of nurses' earnings. According to the OEWE, average earnings for a registered nurse in 1999 were \$44,470, 26 percent larger than reported from Census data; LPN earnings were \$29,020, 31 percent greater than the Census estimate.<sup>18</sup> More importantly, OEWE data also suggest that nurses' wages have risen rapidly in recent years and that the difference between Maryland and U.S. earning levels are larger than suggested by the aforementioned data for the early 1990s (Table 4). Between 1998 and 2001, earnings of

<sup>15</sup> *Nursing Trends and Issues* (4, March 1999) from the Bureau of National Affairs. Wages rates calculated as a weighted average of union and non-union hourly wages.

<sup>16</sup> Data reported in Buerhaus PI and Staiger DO, "Trouble in the Nurse Labor Market? Recent Trends and Future Outlook," *Health Affairs*, 18 (January/February 1999), 214-222.

<sup>17</sup> U.S. Census data were downloaded from the Census website, <http://www.census.gov/hhes/income/earnings>.

<sup>18</sup> U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment and Wage Estimates, <http://www.bls.gov/oes/1999>.

RNs nationwide increased by 12 percent and by 29 percent in Maryland. In 1998, earnings of registered nurses (RNs) in Maryland were 2 percent greater than for the U.S. overall. By 2001, Maryland earnings exceeded the nationwide average by 18 percent. A similar but less dramatic pattern is observed for earnings of LPNs. Earnings of LPNs increased by 12 and 15 percent for the U.S. and Maryland between 1998 and 2001. In 1998, LPN earnings were 16 percent greater in Maryland than for the average LPN nationwide and by 2001 the difference had broadened to 19 percent according to OEWE data. The OEWE data for Maryland are consistent with evidence on nurses' salaries in other markets. For example, the average salary for experienced RNs increased by 18 percent between 1996 and 2001 in the State of Minnesota.<sup>19</sup>

**Table 4. Earnings of Registered and Licensed Practical Nurses, U.S. and Maryland, 1998-2001.**

Year	Registered Nurses			Licensed Practical Nurses		
	U.S.	MD	Ratio	U.S.	MD	Ratio
1998	\$43,070	\$43,920	1.02	\$28,040	\$32,470	1.16
1999	44,470	48,960	1.10	29,020	33,500	1.15
2000	46,410	55,610	1.20	30,470	35,960	1.18
2001	48,240	56,770	1.18	31,490	37,500	1.19

Note: Ratio is the MD-U.S. ratio of earnings.

Source: U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment and Wage Estimates, <http://www.bls.gov/oes/>

Data on the cost of hospital employees may not be directly applicable to employee cost in offices or clinics of physicians and other practitioners. It is interesting to note that findings from the annual Maryland survey of hospitals are consistent with the OEWE estimates and suggest that increases in personnel costs may have been significant into the year 2003 and may be in 2004 and beyond. The cost per hour of a General Duty Nurse increased over 16 percent between 1998 and 2001 (see Table 4), less than the 29 percent increase reported by the OEWE. The Maryland cost increase for LPNs – 16 percent – is comparable to the OEWE estimate of 15 percent.

Employee cost increases indicated by the Maryland survey were larger for the three-year period 1998-2001 than for the two years, 2001-2003, but cost increases during the most recent years remain large: cost increases were of double-digit magnitude for the period 2001-2003 for eight of ten job titles listed. Physicians and other practitioners of office-based practices may not employ all of the types of personnel listed in Table 5 but cost increases of the magnitudes reported in Table 5 (e.g., 11 percent for File Clerks) are likely to be directly related to costs of practitioner office labor. Data from the Maryland

<sup>19</sup> Minnesota Department of Health, *Labor Availability and Health Care Costs*, report to the Minnesota Legislature, October 2002.

surveys and OEWE clearly suggest that the wage and salary components of the MEI (see Table 2) grossly underestimate cost increases faced by Maryland physicians. For nurses in particular the labor component accounting for the largest share of practice expense expectations are that a nursing shortage will strengthen by the end of the decade<sup>20</sup> and an expected consequence is a continuation of the rising costs of hiring nurses.

**Table 5. Employee Cost per Hour of Maryland Hospital Employees and Percent Changes, by Job Title, 1998-2003.**

Job Title	Cost per Hour		Percent Change	
	1998	2003	1998-01	2001-03
<b>Billing Clerk</b>	\$13.87	\$17.33	15.1%	8.6%
<b>Collection Clerk</b>	15.05	18.25	10.9	9.4
<b>File Clerk</b>	11.75	14.03	7.6	11.0
<b>Medical Records Clerk</b>	13.29	15.58	8.2	8.3
<b>General Duty Nurse</b>	27.38	36.62	16.4	14.9
<b>Licensed Practical Nurse</b>	19.12	25.63	15.6	15.9
<b>Nurse Practitioner/Clinical Nurse Specialist</b>	30.76	39.89	16.9	11.0
<b>Nursing Aide (Nursing Asst. I)</b>	12.61	15.38	9.0	11.9
<b>Nursing Aide (Nursing Asst. II)</b>	13.29	16.71	13.6	10.7
<b>Physician's Assistant</b>	33.39	40.58	10.0	10.5

Notes: Cost per hour is calculated by dividing the total cost of employees by hours worked during the year for each job title. Period percent change is the percent change in cost per hour from 1998 to 2003. Yearly change in cost per hour varies over time and by job title; annual change is the average annual change, calculated from the five consecutive two-year periods, 1998-99 through 2002-03, for each job title.

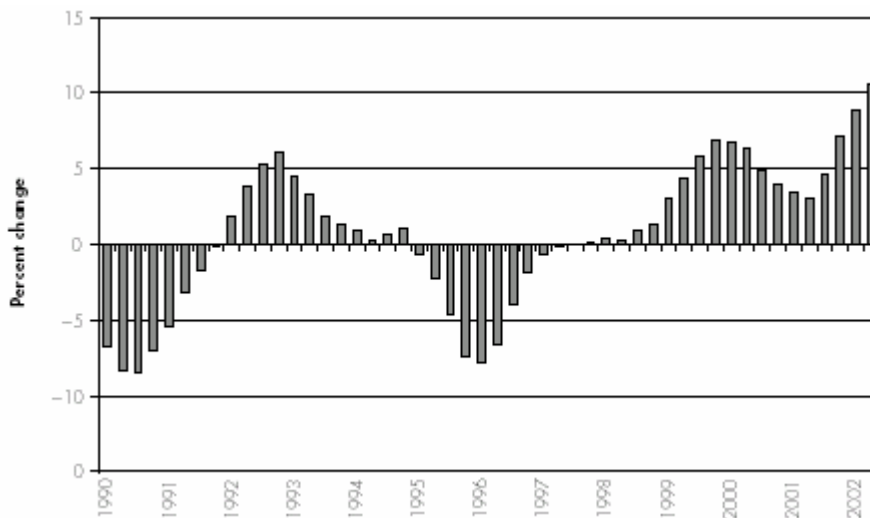
Source: Summary of HSCRC annual hospital surveys wage data from MHCC.

<sup>20</sup> Buerhaus and Staiger, 1999.

**Components of expenses: malpractice premiums.** For physicians, malpractice premiums have received much attention as a driver to the cost of practicing. A number of factors affect the level and volatility of malpractice insurance premiums, including changes in investment income of the insurers and losses on malpractice claims (General Accounting Office 2003). Premiums exhibit volatility and cyclical patterns because premiums can be kept low when high investment income offsets expected losses but losses can increase over time ultimately requiring large “catch-up” increases in premiums. The cyclical nature of malpractice premiums is nicely exhibited in Figure 6, taken directly from the Medicare Payment Advisory Commission’s (MedPAC’s) most recent *Report to Congress* and based on unreported data from CMS.

Differences in absolute levels of premiums and volatility are exhibited across states because of differences in the insurance market and regulatory environments. Some states have imposed limits in liability, limits that are claimed to have helped in keeping premiums lower than they would have been otherwise.<sup>21</sup> Comparisons of premiums from expense surveys are also problematic because in addition to differences due to regulatory and legal environments, providers purchase different kinds of coverage, e.g., with different limits of liability and protection, and these differences may not be controlled for in the reporting of expense estimates.

**Figure 6. Quarterly Changes in Professional Liability Insurance Premiums 1990-2002.**

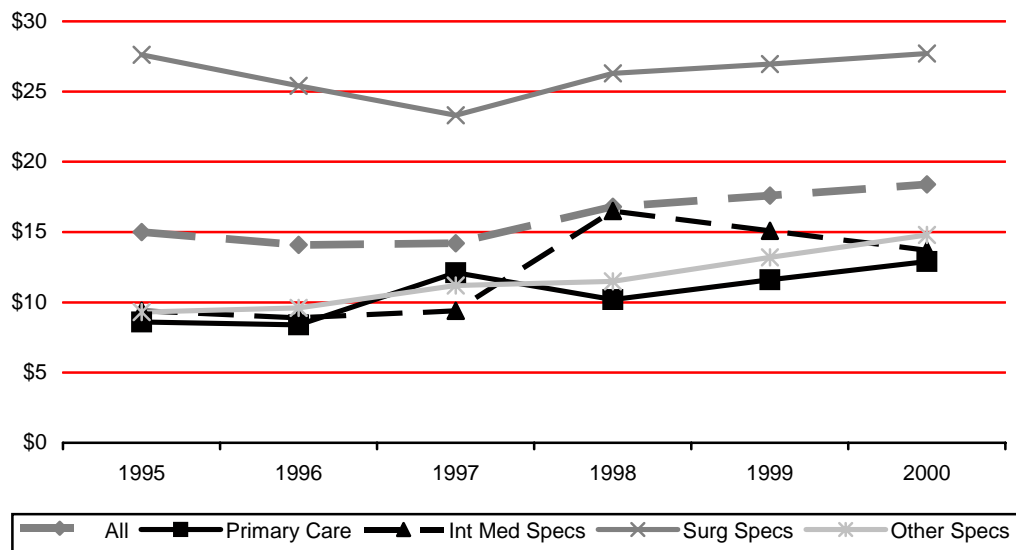


Source: MedPAC. *Report to the Congress: Medicare Payment Policy*, March 2003, p.80, based on unpublished data from CMS.

<sup>21</sup> Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, “Special Update on Medical Liability Crisis,” September 25, 2002, (<http://aspe.hhs.gov/daltcp/reports/mlupd1.htm>), summarizing the report, “Confronting the New Health Care Crisis: Improving Health Care Quality by Fixing Our Medical Liability System,” July 24, 2002, by the Office of Disability, Aging and Long-Term Care Policy, U.S. Department of Health and Human Services. The cyclical nature of premiums was also exhibited clearly in a presentation before the Medicare Payment Advisory Commission (MedPAC), “Medicare’s Payments for Physician Services,” February 14, 2003, by MedPAC staffer Kevin Hayes.

With these caveats in mind, data reported by the AMA on malpractice expenses by self-employed physicians indicate that premiums have increased over the longer run but that differences in levels and volatility exist by specialty. In the year 2000, the malpractice insurance premium for the average self-employed physician was \$18,400 per year, ranging from \$12,900 for primary care providers to \$27,700 per year for surgical specialists (Figure 7).<sup>22</sup>

**Figure 7.**  
**Mean Professional Liability Premiums of Self-Employed Physicians,**  
**1993-2000, \$000s**



Over time, malpractice insurance premium expenses per self-employed physician increased from \$15,000 to \$18,400 between 1995 and 2000, an increase of 23 percent over the 5-year period (Figure 7). But this change masks differences by specialty and short-run volatility changes. Malpractice premium expense increased by 50 percent for primary care physicians between 1995 and 2000, and the premium for surgeons at the beginning and end of the period were comparable. Shorter-run changes during this period, however, were considerable. While the premium change for the average physician was 23 percent during the period, the change during 1997-98 was over 18 percent. In a similar fashion, the 0-percent change in premium for surgeons masks an estimated 18 percent decrease from 1995-1997 and an increase of 16 percent from 1997-1999.

<sup>22</sup> The cyclical pattern of Figure 6 is not exhibited in Figure 7 and Tables 2-4 for several reasons. Figure 6 is based on quarterly data for a standard policy whereas other data reported in the text are from expenses reported as various points in time by survey respondents and for a variety of different kinds of policies.

Evidence from the last several years suggests that annual premium increases have been large. Estimates from a survey conducted by *Medical Liability Monitor* (MLM) for 2002 suggest annual double-digit increases for internists and surgeons since 2000 (Table 6). The smallest premium increase reported from survey results was a 9 percent increase facing obstetricians and gynecologists between 2000 and 2001. The data in Table 6 and Figure 7 suggest that premiums did not decline prior to the cyclical rise beginning in about 2001 as they did during the periods 1989-1992 and 1995-1997.

**Table 6. Average Premium for Internists, General Surgeons, and Obstetricians-Gynecologists 2002, and Annual Percent Increases, 2000-2002**

	Premium	Pct Annual Premium Increase		
	2002	2000	2001	2002
<b>Internists</b>	\$12,355	17%	10%	26%
<b>General Surgeons</b>	36,564	14	10	24
<b>OB/GYNs</b>	49,530	12	9	19

Source: Preliminary data from *Medical Liability Monitor*, reported by U.S. Department of Health and Human Services, "Special Update on Medical Liability Crisis," September 25, 2002, <http://aspe.hhs.gov/daltcp/reports/mlupd1.htm>.

How malpractice insurance premiums in Maryland compare with malpractice premiums elsewhere is ambiguous. Data on premiums for several years and for a variety of specialists were provided by Medical Mutual Liability Insurance Society of Maryland (Med Mutual) (Table 7). Year 2002 premiums for Baltimore City and County internists and obstetricians and gynecologists were greater than for corresponding specialists nationwide as reported by MLM (Table 6 above), but the Med Mutual premium for Baltimore City and County (the highest in Maryland<sup>23</sup>) for general surgeons is less than the premium for general surgeons as reported by MLM.<sup>24</sup>

A comparison of Tables 6 and 7 reveals that rates of increase in premiums for internists and general surgeons were somewhat larger in Maryland than for the nation as a whole in 2001. (This observation is consistent with the GPCI values for malpractice insurance expense displayed in Table 3.) Premiums increased much faster nationwide than in Maryland in 2002 but increases in Maryland since 2003 have been very large – 28 percent (Table 7). Nevertheless, premium increases in the early 2000s in Maryland were not as large as in other states (Table 8).

<sup>23</sup> According to Med Mutual, their rates elsewhere in the State of Maryland are 10 to 25 percent less.

<sup>24</sup> It is interesting to note that premium rankings reported by Med Mutual correspond to the rankings based on the malpractice insurance GPCI for the three Medicare payment areas noted in Table 1.

**Table 7. Average Premiums for Internists, General Surgeons, and Obstetricians/ Gynecologists, 2002, and Annual Percent Increases, 2000-2002, Med Mutual, Baltimore City and Baltimore County, Maryland**

	Premium	Pct Annual Premium Increase			
	2002	2001	2002	2003	2004
<b>Internists</b>	\$13,304	13%	2%	11%	28%
<b>General Surgeons</b>	30,933	13	2	11	28
<b>OB/GYNs</b>	66,765	3	2	11	28

Notes: Data for internists are for internists conducting minor surgery. Premiums for 2002 are for Baltimore City and Baltimore County. While premium levels are reportedly about 10 percent less in Prince George's, Montgomery, Howard, and Anne Arundel Counties and about 25 percent less elsewhere in the state, rates of increase are similar to those tabulated above for Baltimore.

Source: Personal communication from Medical Mutual Liability Insurance Society of Maryland, October 29, 2003.

As with nurses' wages, it is difficult to predict future trends in malpractice premiums except to note that cyclical patterns can be expected. A lack of comprehensive data on the industry hampers analysis. The nature of the malpractice insurance industry is also changing which makes predictions problematic.<sup>25</sup> A number of insurers have left the Maryland market in recent years,<sup>26</sup> which constrains choice among physicians and limits competition among remaining malpractice insurance providers. The share of the malpractice industry owned or operated by physicians is increasing, and there is a trend favoring self-insurance, an option only for larger provider groups.

**Table 8. Percentage Changes in Premiums of the Largest Malpractice Insurers, Selected States, Three Specialties**

	<b>Internal Medicine</b>	<b>General Surgery</b>	<b>Obstetrics Gynecology</b>
<b>MN</b>	2%	2%	2%
<b>MS</b>	10	120	21
<b>CA</b>	5-21	5-21	(-9)-21
<b>MD</b>	28	28	16
<b>NV</b>	4-50	4-50	4-50
<b>FL</b>	52-98	51-75	26-43
<b>TX</b>	40-108	31-104	30-62
<b>PA</b>	73-130	73-130	99-165

Notes and Sources: Data for all states except Maryland are for 1999-2002, from surveys of the *Medical Liability Monitor*, as reported by the GAO (2003). Percent ranges are reported for the largest medical malpractice insurers in the states. Data for Maryland are from Med Mutual and are for the period 2000-2003. States are ranked according to size of the largest percent increase in premiums for internal medicine specialists.

<sup>25</sup> U.S. General Accounting Office (GAO). *Medical Malpractice Insurance: Multiple Factors Have Contributed to Increased Premium Rates*, June 2003.

<sup>26</sup> Insurers leaving the Maryland market since 1995 include Princeton, MHX, Zurich, Preferred Physicians, and FPIC, and others.

## Uncompensated Care

Included in the cost of providing physician services is the cost of uncompensated care. While analysts have traditionally worried about the level of uncompensated care consisting of both bad debt and charity care, researchers have attempted to measure these components separately. Bad debt refers to patient charges that were expected to be paid, but never were received from patients; charity care refers to care provided free or at reduced fees due to the patient's financial constraints.<sup>27</sup> Monitoring of trends in uncompensated care may help signal problems in access to care arising from changes on the demand side (e.g., changes in patient insurance status that reduce the number of insured or payments from third party payers) or on the supply side (e.g., increased costs of providing care).

As part of the SMS, the AMA monitored trends in uncompensated care through the 1990s. In 1994, about 68 percent of patient care physicians provided charity care, an increase over levels in 1988 and 1990 (62 and 64 percent), respectively.<sup>28</sup> Also increasing between 1988 and 1994 were the number and percent of hours worked in providing charity care. In 1994, over 7 hours per week were in providing charity care, or 12 percent of the work week of patient care physicians who provided charity care. Physicians who were full-or part-owners of their practice in 1994 reported an average of \$37,500 of bad debt for 1993 – double the amount reported in an earlier SMS survey for 1988. Results from the 1999 SMS indicate that relatively less charity care was provided than in 1988.<sup>29</sup> About 65 percent of the national sample reported providing some charity care and about 9 hours of charity care per week were provided by those providing some charity care.

Following the demise of the SMS, trends in uncompensated care have not been monitored. More recent evidence consists of point-in-time estimates of charity care from independent studies. Results from a study based on nationally representative data from the Community Tracking Study (CTS) funded by the Robert Wood Johnson Foundation indicates that in 1998, over 77 percent of physicians provided some charity care — defined as free or reduced fee care — and the average provider provided over 10 hours of charity care per month,<sup>30</sup> less than in 1988. Of special importance, however, is the finding that physicians whose practices derived a high proportion of revenues (85 percent or more) from managed care provided about 40 percent less free or reduced fee care than physicians whose practices received 1-20 percent of revenues from managed care.

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<sup>27</sup> Emmons DW, "Uncompensated Physician Care," in *Socioeconomic Characteristics of Medical Practice 1995*, ed. ML Gonzalez, Chicago: AMA, 1995, 11-14.

<sup>28</sup> Ibid.

<sup>29</sup> Adams D, "AMA Survey: More Doctors Volunteering," Amednews.com, May 13, 2002. Even though fewer doctors overall reported providing some charity care, the percent providing charity care increased for some specialties, e.g., emergency medicine – hence, the title of the article.

<sup>30</sup> Cunningham PJ et al., "Managed Care and Physicians' Provision of Charity Care," *Journal of the American Medical Association*, 281 (March 1999), 1087-1092.

Results from a mail survey of internists who provided primary care in private practice in 2002 indicate that the fraction providing some charity care – 68 percent – is the same as in 1988.<sup>31</sup> The extent of charity care provided by many physicians, however, was less in 2002 than in 1988. In 2002, the mean number of hours of charity care *per month* was 11 (similar in magnitude to the CTS estimate for 2001), versus 7 hours *per week* in 1988. This study also sheds some light on the nature of charity care provided and patients who receive this care. Results indicate that in 2002, internists who provided at least 10 hours of charity care per month provided a third of these hours in clinics, hospital settings, or other locations – sites where practice expenses incurred by the physician are likely to be less than in the office per se. A significant amount of charity care was provided in the form of care provided for a reduced fee to established patients of the practice who recently lost insurance coverage. Established patients who lost their insurance were served by 52 percent of internists who reported serving the uninsured.

The authors are aware of no evidence, representative of Maryland physicians as a whole, suggesting that Maryland physicians differ from the average physician nationwide with respect to the provision of charity care or bad debt.

### **3. Comparison of Payment to Cost and Other Analyses Using the Maryland Medical Care Data Base**

This section examines the rates paid to physicians and other medical practitioners by public and private insurers in Maryland. The first set of analyses compares insurers' payments to practitioners' average overhead costs. These overhead costs include the average expenses of running a medical practice and the cost of malpractice insurance, but do not include the practitioner's own income or salary from providing services. A second set of analyses looks at two aspects of private insurers' rates measuring the extent to which private insurers offer lower payments to non-physician practitioners, and the extent to which HMOs appear to comply with Maryland law requiring minimum payment rates for non-network or non-contract providers.

#### **Comparison of Payment to Fully-Allocated Overhead Cost, 2002**

Comparison of payments from Medicare, Medicaid, and private insurers to an estimate of physicians' typical overhead costs is addressed in this section of the report. Payment rates include both the amounts paid by the insurer and any deductible, coinsurance, or other amounts paid directly by the patient. Data on payment rates for Medicare and Medicaid come from published fee schedules. Private insurers' payment rates are estimated from the Maryland Medical Care Data Base (MCDB), a summary of physician and other practitioners services provided to privately-insured Maryland residents. Information on physicians' costs is drawn from the AMA SMS surveys cited above. Data on the average number and complexity of services for the typical physician were from the most recent survey by the Medical Group Management Association (MGMA).<sup>32</sup>

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<sup>31</sup> Fairbrother G et al., "Care for the Uninsured in General Internists' Private Offices," *Health Affairs*, 22 (November/December 2003), 217-224. Emmons (1995) reported 68 percent for internists, the same percent as for physicians of all specialties combined.

<sup>32</sup> MGMA, Physician Compensation and Production Survey, 2003.

**Background: payment, cost, and income for practitioners' services.** The legislative mandate for this study calls for a comparison of insurers' payment rates to the cost of care. We focus on the narrow technical issue of comparing payments to overhead and malpractice costs, and do not include the practitioner's own income or salary in the estimate. This section briefly explains why practitioners' incomes or salaries are not included in this comparison of payment to cost.

The majority of U.S. medical practices are organized as sole proprietorships or partnerships where the physicians are owners of the practice. In 2001, 56 percent of U.S. active patient care physicians reported being full or part owners of their practices, down slightly from previous years.<sup>33</sup> For the remaining 44 percent, physicians were either salaried employees or were working under financial arrangements.

Widespread physician ownership of their own medical practices blurs the distinction between *cost* and *income* in any discussion of payment for practitioners' services. When practitioners are owners of, or partners in, medical practices the difference between total payment to the practice and the total overhead cost of running the practice becomes the practitioners' incomes.

Arithmetically, for sole proprietor and partnership practices:

$$\text{Payments} - \text{practice cost} = \text{practitioner income.}$$

This can be restated by re-arranging the formula above. For sole proprietorship and partnership practices, total payments for practitioners' services either cover the costs of running the medical practice or become the practitioners' incomes:

$$\text{Payments} = \text{practice cost} + \text{practitioner income}$$

This means that the typical medical practice with owner or partner practitioners does not have a well-defined "total cost of care." Instead, insurers' payments first cover the costs of running the practice and any payment in excess of those overhead costs becomes the practitioners' incomes. All other things equal, higher payments lead to higher practitioner incomes. For these practices, if we counted practitioner income as a "cost," we would be looking at a tautology. Payment would always equal "cost," no matter what the level of payment was.

For practices with salaried physician employees, by contrast, the total cost of care can be identified at least in an accounting sense. For those practices, payments to the practice cover both practice costs and total reimbursement to the practitioners (salary and benefits). Any excess (or deficit) of payment above (or below) these costs becomes the profit or loss of the practice. That is, for a practice with salaried physicians the accounting relationship is the following:

$$\text{Payments} = \text{practice cost} + \text{practitioner salary} + \text{profit (surplus) or loss}$$

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<sup>33</sup> This was calculated from the Center for Studying Health System Change, Community Tracking Survey, physician component, accessible at <http://CTSONline.s-3.com/psurvey.asp>.

For two reasons, this analysis compares payment to practice costs (including malpractice insurance costs) and does *not* include an estimate of practitioner income as part of costs. The first reason is the availability of data. The American Medical Association (AMA) publishes the most-cited statistics on physician cost and incomes by specialty. These data are the standard information source for information on physician income and practice costs, having been used, for example, to set the share of payments attributable to practice expense and malpractice expense under the Medicare physician fee schedule. AMA survey data are published for self-employed physicians not employee physicians.

Second, economic theory suggests that the level of physicians' salaries as employees should mirror the income that they could have earned as practice owners after adjusting for differences in amenities and risks involved in owning a practice compared to being employed by a practice. In the long run, practices with employee physicians must offer salaries that are roughly competitive with the income physicians could earn as practice owners (after adjusting for differences in amenities and risk between ownership and employee practice.) But this implies that practices with salaried physicians are only one step removed from the situation described above for partnership practices. Practices with employee physicians see physician salaries as a *cost*, but this cost depends strongly on the *incomes* that could be earned as practice owners.

For this reason, a complete analysis of whether insurers' rates are adequate is a complex undertaking. A complete discussion of the adequacy of practitioner payment rates inherently involves asking whether the *incomes* generated by those rates are high enough to attract and retain physicians to serve the insured population.

The Medicare Payment Advisory Commission (MedPAC) annual examination of the adequacy of Medicare physician payments shows how complex this task can be.<sup>34</sup> To assess the adequacy of Medicare's rates, MedPAC asks how Medicare rates compare to other insurers' rates, whether physicians are willing to accept new Medicare patients, whether more or fewer physicians are billing Medicare for care, whether the supply of physicians appears to be keeping pace with the demand for care, and whether rate increases are above or below increases in practice costs. These factors are used to make a qualitative determination of the adequacy of Medicare's physician payment rates.

This analysis, by contrast, concentrates on a more limited question: Do payers' rates cover the average overhead costs of providing a procedure? Unlike the more general question of payment adequacy, this is a question that can be addressed empirically, comparing payment and practice cost data. In effect, we ignore physician income entirely and instead focus on a very minimal standard of whether payment rates are high enough to cover some reasonably pro-rated share of the typical overhead cost of running a physician practice.

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<sup>34</sup> MedPAC, *Report to the Congress: Medicare Payment Policy*, March 2003.

***Fully-allocated practice and malpractice costs: data and methods.*** This section describes data sources and methods used to determine average overhead cost (practice expense and malpractice expense) for each of the roughly 7,000 Current Procedural Terminology (CPT) codes that describe the services performed by physicians and other practitioners.

The method of calculating average overhead cost for each procedure is straightforward in concept. In general, average cost by service is estimated by dividing an estimate of average practice and malpractice cost per physician by an estimate of total services produced per physician. Then, for each service, we compare insurers' payment rates to this estimated average overhead cost. Rather than use a simple count of services (and therefore not distinguish between services that require different levels of practice resources), we measure the total quantity of care per physician using resource-based relative value units (RVUs) of care. When cost per RVU is used to calculate cost per service, this approach gives more weight to more complex services, and less weight to less resource-intensive services. We use RVUs developed for the Medicare physician payment methodology, well-documented in MedPAC annual reports to Congress, the *Federal Register*, and on the website of the Centers for Medicare and Medicaid Services (CMS).<sup>35</sup>

Although simple in concept, the actual calculation is complex and potentially imprecise because of the paucity of data on physicians' cost and productivity. As described in the appendix, we relied on two different surveys of physicians for cost and quantity information. The number of survey respondents for represented specialties are often small, samples may be subject to self-selection bias, and data have not been audited to verify their accuracy. The detail of the steps of the calculation is given in the appendix.

***Results.*** Based on this analysis of fully-allocated practice and malpractice costs, private HMOs, private non-HMO plans, and Medicare all pay rates that are, on average, substantially above costs. The similarity of the Medicare and private data makes sense because private payers rates are close to Medicare's rates in Maryland on average and the gap between HMO and non-HMO rates is, on average, relatively small.<sup>36</sup> The Medicaid program, by contrast, pays rates that barely cover physician overhead plus malpractice costs on average.

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<sup>35</sup> Detailed Medicare information on the physician fee schedule can be accessed at the following URL: <http://cms.hhs.gov/physicians/pfs/default.asp>

<sup>36</sup> MHCC. *Practitioner Utilization: Trends Within Privately Insured Patients*. MHCC, Baltimore, MD, 2003.

**Table 9. Ratio of Payment to Overhead and Malpractice Cost, by Payer, All Physicians' Services Average of Physicians' Services**

	<b>Ratio of Payment to Cost</b>
<b>Private payers</b>	169%
<b>HMO (fee-for-service payments)</b>	162%
<b>Non-HMO</b>	173%
<b>Medicare</b>	165%
<b>Medicaid</b>	101%

Notes: This and subsequent tables in this section only include services for which all payers (private, Medicare, and Medicaid) provided fee information. Services not paid on the basis of the Medicare fee schedule, such as lab tests, were excluded. All payers Services not paid on the basis of the Medicare fee schedule, such as lab tests, were excluded. All payers were compared using the same mix of services and specialties, which was the mix of all private payers combined. Cost includes overhead and malpractice costs only, and does not include practitioners' income (for partnership practices) or salary (for non-partnership practices).

These reported payment-to-cost ratios are somewhat lower than ratios calculated from national data from the American Medical Association's Socioeconomic Monitoring System survey. Using AMA data for physicians nationwide in 2001, mean practice revenue per physician was about 190 percent of mean practice expense, while the ratios shown in Table 9 are all substantially below that level.<sup>37</sup>

This occurs mainly because private payers' rates in Maryland are lower than average private insurance payment rates nationwide so that payment per RVU in Maryland is lower than payment per RVU nationally. Nationally, private rates in 2002 were estimated to be about 129 percent of Medicare's rates.<sup>38</sup> In Maryland, by contrast, private payers practitioner fees are, on average, roughly equal to Medicare's rates. That difference appears to account for Maryland's payment-to-cost ratio being below the U.S. average.<sup>39</sup>

An examination of payment-to-cost ratios by type of service reveals that Maryland Medicaid payments exceed costs only for visits (Table 10). Both Medicare and private payer rates exceed costs for all categories of service.<sup>40</sup> The data also show that private insurers tend to pay better than Medicare for procedures and tests but private payments are less generous than Medicare payments for visits, as has been noted elsewhere for Maryland and for the U.S. as a whole.<sup>41</sup>

<sup>37</sup> AMA, *Physician Socioeconomic Statistics*. Chicago: AMA, 2003.

<sup>38</sup> Calculated from MedPAC, *Report to the Congress: Variation and Innovation in Medicare*, June 2003.

<sup>39</sup> To demonstrate that low Maryland private fees accounted for the low payment-to-cost ratio in Maryland, we recalculated Table 9 using US average private payer physician fees, rather than the Maryland rates. Recalculated this way, the all-payer average payment-to-cost ratio was 1.86, close to the US average of 1.90. This shows that if Maryland private payers paid rates that matched national average rates, the Maryland payment-to-cost ratio would roughly match the national average payment-to-cost ratio.

<sup>40</sup> Variation in the payment-to-cost ratio for Medicare is mainly due to variation in the proportion of claims that are for the technical or professional component of care only.

<sup>41</sup> AMA, *Socioeconomic Statistics* and MHCC, *Practitioner Utilization*. This analysis applies only to procedures paid under the Medicare physician fee schedule. Automated lab tests are not included in the tests category.

**Table 10. Ratio of Payment to Overhead and Malpractice Cost, by Payer and Type of Procedure, 2002**

<b>Type of Procedure</b>	<b>Private Payers</b>	<b>Medicare</b>	<b>Medicaid</b>
<b>Total</b>	169%	165%	101%
<b>Imaging</b>	122%	119%	58%
<b>Visits</b>	180%	189%	142%
<b>Procedures</b>	225%	194%	81%
<b>Tests</b>	154%	124%	49%

Source: Analysis of 2002 Maryland Medical Care Data Base (MCDB), Medicare and Medicaid Fee Schedules, and cost and productivity information from the American Medical Association and the Medical Group Management Association.

Note: Cost includes overhead and malpractice cost only, and does not include the cost of the practitioners' own income (for partnership practices) or salary (for non-partnership practices).

The data for imaging reflect a particular aspect of the way in which imaging services are traditionally billed. For most other services, bills are submitted that reflect the insurer's full payment for both the overhead and technical services associated with the bill and for the physician's time. For radiology, however, some fraction of bills are solely for the technical (overhead) aspects of the service. The presence of some bills that are entirely for technical (overhead) costs explains, in part, the relatively lower numbers for imaging compared to other services. To a lesser degree, this type of billing may also occur for tests and for some procedures.

Although the underlying data are not accurate enough to allow calculation of these ratios for individual specialties, they appear adequate to show the variations in the ratio of payment to cost by large groups of specialties: primary care physicians, medical specialists, surgeons, and others (mainly radiologists and pathologists). The variations in payment-to-cost by specialty are somewhat less extreme than those by type of service, because most specialties produce some mix of office and hospital visits, tests, and procedures. Nevertheless, the specialty analysis in many ways mirrors the type-of-service analysis above. The payment-to-cost ratio for primary care physicians is lower than that of medical and surgical specialists. The "other" physicians which, in this analysis, are heavily weighted toward radiologists, also show a lower payment-to-cost ratio, due at least in part to the technical issue of radiology billing discussed above.

**Table 11. Ratio of Payment to Overhead and Malpractice Cost by Payer and Aggregate Specialty**

<b>Specialty Category</b>	<b>Private</b>	<b>Medicare</b>	<b>Medicaid</b>
<b>Total</b>	169%	165%	101%
<b>Primary Care</b>	140%	143%	108%
<b>Medical Specialists</b>	196%	188%	117%
<b>Surgeons</b>	214%	218%	120%
<b>Other</b>	156%	146%	81%

Note: Cost includes overhead and malpractice costs only, and does not include practitioners' income (for partnership practices) or salary (for non-partnership practices).

Source: Analysis of Maryland Medical Care Data Base (2002), with Medicare and Medicaid fees. All calculations are done using average private payer case mix. Definitions of the specialty categories are given in the Appendix.

### **Payer Mix and Typical Financial Stress of Maryland Physicians**

The analysis above suggests a few broad characteristics of the degree of financial stress that Maryland physicians should be experiencing. In the aggregate, the payment-to-cost ratio for Maryland physicians is below the U.S. average, due mainly to private insurance rates that are below the U.S. average. In that regard, to the extent that physicians nationwide are facing increasing cost pressures, those pressures might be felt more keenly in Maryland than in the U.S. as a whole.

Within Maryland, a practitioner's specialty, service mix, and payer mix may strongly influence the degree of financial stress currently being felt. That is, the extent to which payments exceed practice costs and malpractice expense probably depends strongly on the characteristics of the physician practice, including not only payer and service mix but also the extent to which the practice provides free (uncompensated) care.

Table 12 illustrates how the characteristics of medical practice might influence the extent to which payments exceed overhead costs, on average. The top line shows that revenue for a typical Maryland primary care physician averages 142 percent of average overhead cost for a physician accepting equal shares of Medicare and private pay patients only (Table 12, top line). If that same practice were split evenly among Medicare, Medicaid, and private patients, payments would average only 130 percent of overhead costs (Table 12, second line). If the physician attempted to split the practice equally among uncompensated care, Medicaid, Medicare, and private patients, revenue would no longer cover overhead costs. Similarly, for medical specialists and surgeons, the table shows the average impact of moving from a practice devoted entirely to Medicare and private-pay patients to one with significant shares of Medicaid and charity care.

**Table 12. Illustration of the Impact of Payer and Specialty on Financial Stress**

Specialty	<u>Payer mix</u>				Payment-to-Cost Ratio
	Percent Uncompensated	Percent Medicaid	Percent Medicare	Percent Private	
Primary Care	0%	0%	50%	50%	142%
Primary Care	0%	33%	33%	34%	130%
Primary Care	25%	25%	25%	25%	98%
Medical Specialist	0%	0%	50%	50%	192%
Medical Specialist	0%	33%	33%	34%	167%
Medical Specialist	25%	25%	25%	25%	125%
Surgeon	0%	0%	50%	50%	216%
Surgeon	0%	33%	33%	34%	184%
Surgeon	25%	25%	25%	25%	138%

Note: Cost includes overhead and malpractice costs only, and does not include practitioners' income (for partnership practices) or salary (for non-partnership practices).

Source: Analysis of Maryland Medical Care Data Base (2002), with Medicare and Medicaid fees. All calculations are done using average private payer case mix. Definitions of the specialty categories are given in the Appendix. For this simulation, uncompensated care is assumed to provide no revenue to the practice.

An equivalent way to discuss the impact of payer mix on financial stress is to discuss the implied net physician income, that is, all payment in excess of 100 percent of cost. When viewed that way, the impact of moving from a Medicare and private insurance case mix to one with equal shares Medicare, Medicaid, and private insurance appears to have a roughly uniform percentage impact on each of the three broad specialty categories shown above. For all three specialties, the implied net income would fall 27 percent under such a shift in payer mix (calculated from Table 12).

### **Analysis of 2002 Payment Rates**

The remainder of this section addresses two issues using Maryland Medical Care Data Base (MCDB) claims for 2002. First, to what extent do Maryland private payers tend to pay non-physician practitioners at rates that are lower than physician rates for comparable services? Second, to what extent do HMO payers appear to follow existing law mandating payment at 125% of in-network rates for services provided by out-of-network physicians?

***Payment differentials for non-physician practitioners.*** Private insurers' payments to non-physician practitioners are somewhat less than their payments to physicians for the same service. A price index methodology is used to summarize the extent of this payment discounting using payment data reported in the 2002 MCDB.

To calculate the extent of payment discounting we identified physician and non-physician specialists who provided the same services. Mean private payments were calculated separately for each CPT code and pricing-relevant CPT modifier. Price indices were constructed as ratios comparing payments under two circumstances. The numerator of the ratio is the total of payments using the rates paid to the non-physician practitioner; the denominator is the total of payments assuming non-physician practitioners had been paid the same rates as the average physician.<sup>42</sup> Thus, the ratio – actual payments relative to what would have been paid in the absence of discounting – is a measure of the degree of discounting that non-physician practitioners faced relative to physicians. No adjustments for geographic location, participation status, payer mix, or other factors that might plausibly affect average payments were made.

Most non-physicians are paid rates that average 80 to 90 percent of the rates paid to physicians for the same services (Table 13). The notable exception was clinical social workers who were paid an average of about two-thirds the rates paid to physicians. The results shown here – for 2002 – are similar to the results shown for individual services using 2001 data.<sup>43</sup>

In part, we would expect to see some payment differential based on practice costs and malpractice costs. MedPAC examined the issue of practice costs of nonphysician practitioners and concluded that malpractice insurers costs are known to be lower than for physicians but that little else was known about practice expense for these specialties.<sup>44</sup>

Medicare payment policy provides a useful comparison to these private-payer averages. Table 14 shows the current status of Medicare payment policy for selected nonphysician practitioners. In general, Medicare allows 100 percent of the physician fee schedule rate for most services performed by non-physician practitioners, with the exceptions noted in Table 14. (These services must, of course, be within the legal scope of practice of the practitioner and deemed both covered and medically necessary under Medicare regulation.)

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<sup>42</sup> We did not exclude bills paid to out-of-network practitioners so the amounts paid include any balance billing amounts.

<sup>43</sup> MHCC, *Practitioner Utilization*.

<sup>44</sup> MedPAC, *Medicare Payment to Advance Practice Nurses and Physician Assistants, Report to the Congress*, June 2002.

**Table 13. Average Percent Ratios of Private Insurers' Payments to Non-Physicians Relative to Payments to Physicians for Same Services by Practitioner Type**

<b>Non-Physician Practitioner</b>	<b>Rate as Percent of Physician Rate</b>	<b>Percent of All Professional Services Payments, 2002</b>
<b>Physical Therapist</b>	85%	3.5%
<b>Chiropractor</b>	81%	2.5%
<b>Psychologist</b>	87%	1.5%
<b>Podiatrist</b>	91%	1.3%
<b>Clinical Social Worker</b>	66%	1.1%
<b>Optometrist</b>	88%	0.4%
<b>Occupational Therapist</b>	88%	0.1%
<b>Audiologist/Speech Pathologist</b>	86%	0.1%

Source: Analysis of Maryland Medical Care Data Base, 2002.

Notes: Certified Registered Nurse Anesthetists are not included in this analysis. See Appendix for details.

In addition, when services are performed incident to a physician visit and billed by the physician (rather than directly by the non-physician practitioner who performed the service), payment is always made at 100 percent of the physician fee schedule amount.<sup>45</sup> A comparison of the two tables shows that both payers pay low rates to clinical social workers, but otherwise private payers are more likely to use discounted rates than is Medicare.

**HMO payment to non-participating physicians.** Maryland legislation passed in 2000 (Senate Bill 405, Chapter 275 of the Acts of 2000) requires HMOs to pay nonparticipating physicians at least 125 percent of the rate paid to participating physicians. HB 805 modified this provision by adding the requirement that comparability with the 125 percent limit was to be based on the geographic regions (localities) specified by CMS. CMS uses three pricing localities in Maryland, the metropolitan area of Washington DC, the Baltimore metropolitan area, and the remainder of the state. In this section, we use the MCDB to examine whether HMOs appeared to be complying with this law in 2002.

<sup>45</sup> MedPAC, *Medicare Payment to Advance Practice Nurses and Physician Assistants, Report to the Congress*, June 2002.

**Table 14: Medicare Payment Rules for Non-Physician Practitioners**

<b>Specialty</b>	<b>Percent of Physician Rate</b>
<b>Physical Therapist</b>	100%
<b>Chiropractor</b>	100%
<b>Psychologist</b>	100%
<b>Podiatrist</b>	100%
<b>Clinical Social Worker</b>	75%
<b>Optometrist</b>	100%
<b>Occupational Therapists</b>	100%
<b>Audiologist/Speech Pathologist</b>	100%
<b>Nurse practitioners</b>	85%
<b>Physician assistants</b>	85%
<b>Nurse midwives</b>	65%

Source: MedPAC, *Medicare Payment to Advance Practice Nurses and Physician Assistants, Report to the Congress*, June 2002, supplemented by analysis of Centers for Medicare and Medicaid Services carrier manuals.

This 125 percent limit applies to all non-trauma services while a higher 140-percent limit applies to trauma services provided to HMO enrollees by nonparticipating physicians. Trauma patients could not be separately identified in the MCDB files used for this analysis so only the 125 percent limit is analyzed.

The 125-percent rule is difficult to enforce without information on in-network payment rates. In this analysis, the 125 percent payment threshold is estimated, based on average payments by payer, region, and service. Thus, analysis shows the extent to which HMOs *appear* to be complying with the minimum payment standards for non-participating physicians, based on the assumption that the average rate for participating physicians is a reasonable approximation of the HMO's in-network rate.

Analysis began with steps used in preparation of the Maryland Medical Care Data Base.<sup>46</sup> Records submitted by HMOs for fee-for-service payments were extracted and separated for participating and non-participating physicians. Mean payment rates for participating and non-participating physicians were calculated by payer and region of the state. To the extent that some physicians bill below the fee limits of the plan, these payment means should under-estimate plan-maximum payment rates. That should, in principle, result in a conservative (low) estimate of the fraction of bills that do not meet the true 125 percent threshold. In calculating these averages, we omitted any cases where fewer than 10 bills for participating physicians were available for a given insurance plan, region of the state, and service. Rates for participating and non-participating physicians were matched by plan, region, and service. We identified bills where the payment to the nonparticipating

<sup>46</sup> For a description of the MCDB, see Maryland Health Care Commission, *Practitioner Utilization: Trends within Privately Insured Patients, 2000-2001*, March 2003.

provider was above 125 percent of the payment to the participating providers (or, if not, where payment was made at the billed charge).

Non-participating HMO bills were concentrated in just a few categories, with emergency department visits being the most frequent (Table 15). Patterns of apparent compliance in 2002 were similar to those shown in 2000, with somewhat less than half of HMO non-participating bills appearing to exceed the 125 percent threshold. In short, there appears to have been essentially no change from 2000 to 2002 in the fraction of bills complying with the regulation.<sup>47</sup>

For two reasons the apparent level of compliance shown above may somewhat overstate the financial impact of full compliance with the statutory minimum payment amounts. First, we estimated the threshold amounts based on average payments to participating physicians by payer, locality, and service. This is only an approximate estimate of any payer's actual fee schedule amount in a given area. Second, some bills may fail this test by only a small amount of money so that the additional payments from full compliance may be modest.

Finally, in the absence of public information on each payer's payment rates it may be difficult for physicians to know when payments from HMO plans are not in compliance with the law. For this reason, some analysis has suggested an alternative minimum payment threshold based on Medicare rates, which are public information. Medicare rates may often differ substantially from private rates, however, and compliance with a Medicare-based threshold amount (e.g., 125 percent of Medicare) might or might not correspond with compliance with the current thresholds.

We examined several alternative minimum payment thresholds, comparing them to the 125 percent threshold shown above. For each alternative, we estimated the fraction of bills that met or exceeded the threshold or were paid at the billed charge. We also estimated how much total payment on all non-participating physician bills would increase if all bills currently below the payment threshold were paid at the threshold or at the billed charge, whichever was lesser (Table 16).

The first column of Table 16 shows the estimated level of compliance with the current threshold (top half, same data as Table 15), and shows the extent to which full compliance would raise total payments on these HMO nonparticipating physician bills. Although only 46 percent of bills were estimated to meet the threshold amount (Table 16, column 1, top half), full compliance was estimated to increase total payment on these bills by just 9 percent (Table 16, column 1, bottom half.) On average, total payment on these bills was only about 9 percent less than it would have been under full compliance with the legislated minimum payment.

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<sup>47</sup> We made some changes in the methods used to calculate these rates in 2002 compared to 2000 but this does not appear to have affected the aggregated compliance rate by more than one percentage point. In addition, small changes in the threshold (for example, subtracting one dollar from the threshold) result in changes of only a few percentage points in the numbers shown in the table.

**Table 15. Estimated Fraction of HMO Claims by Non-Participating Physicians With Payment Exceeding Statutory Minimum Rate**

<b>Percent Exceeding 2002 HMO Nonparticipating Physician Bills Minimum Rate</b>					
	<b>2000</b>	<b>2002</b>	<b>Number</b>	<b>Percent of All Non-participating Bills</b>	<b>HMO Non-participating as Percent of All Bills</b>
<b>Total</b>	45%	46%	228,619	100%	2%
<b>Five Highest-Volume Categories of Service</b>					
<b>Emergency Room Visit</b>	22%	22%	46,456	20%	15%
<b>Office Visits – Established</b>	53%	50%	26,656	12%	1%
<b>Specialist Visits – Psychiatry</b>	91%	90%	19,593	9%	6%
<b>Lab Test</b>	52%	47%	12,032	5%	2%
<b>Minor Procedures (misc.)</b>	47%	65%	11,206	5%	2%

Source: Analysis of 2000 and 2002 Maryland Medical Care Data Base (MCDB)

Notes: Services were counted as meeting the statutory criteria if the payment on the bill exceeded the estimated 125 percent threshold or if the insurer paid the physician's full billed charge.

The remaining columns in Table 16 show the impact of alternative minimum payment floors. The second column sets a minimum based 125 percent of the 25<sup>th</sup> percentile of private rates paid by an insurer in an area. (This is in contrast to the first column, based on 125 percent of the *average* of each insurer's payment in an area.) Unsurprisingly, the lower screen results in a higher fraction of bills passing the screen. The third column shows the effect of minimum payments based on 125 percent of Medicare rates. In general, the differences between the third and first columns reflect differences in Medicare and HMO pricing for different categories of services. Medicare rates for office visits typically exceed those of HMOs, and accordingly a lower fraction of office visit bills would pass a Medicare-based screen. For ER visits, by contrast, Medicare rates average substantially lower than typical private rates, and a much higher fraction of ER bills would exceed a Medicare-based screen than a screen based on HMO participating physician payment rates. The remaining two columns take the greater of the Medicare-based or private-fee-based screens for each payer and service. Because they take whichever screen would be higher, they tend to show a lower fraction of bills exceeding the screens (top half) and larger increases in total payments if all bills were paid at or above the screen amounts (bottom half).

**Table 16: HMO Non-Participating Physician Bills Compared to Various Minimum Payment Thresholds**

Category of Service	Threshold Based On:				
	125% of Participating Physician Average Payment (A)	125% of Participating Physician 25th Percentile of Payments (B)	125% of Medicare (C)	Greater of (A) or (C)	Greater of (B) or (C)
<b>Percent of Bills Exceeding Threshold Amount</b>					
<b>All Services</b>	46%	68%	60%	40%	52%
<b>Five Most Common Categories</b>					
ER Visit	22%	60%	67%	18%	50%
Office Visit	50%	61%	47%	46%	46%
Psych Visit	90%	95%	85%	85%	85%
Lab Test	47%	57%	47%	41%	43%
Minor Procedures, Misc	65%	79%	70%	63%	66%
<b>Percent Increase in Payments on HMO Non-Participating Physician Bills if All Bills Met Threshold</b>					
<b>All Services</b>	9%	3%	7%	13%	8%
<b>Five Most Common Categories</b>					
ER Visit	9%	3%	2%	10%	4%
Office Visit	7%	4%	13%	14%	13%
Psych Visit	1%	<1%	4%	4%	4%
Lab Test	38%	9%	9%	41%	13%
Minor Procedures, Misc	8%	2%	8%	11%	9%

Source: Analysis of Maryland Medical Care Data Base, 2002

Notes: Services were counted as meeting the statutory criteria if the payment on the bill exceeded the estimated 125 percent threshold, or if the insurer paid the physician's full billed charge.

Several caveats of this analysis should be noted. Average payment per service to participating providers (for a given plan, region, and service) was used as the basis for calculating the estimated 125 percent threshold. Unlike the remainder of this report, this analysis includes only physicians, excluding bills from non-physician practitioners.

## Summary

The available data on physicians' costs and production of health care services are limited, and are not precise enough to allow us to examine the fiscal stress experienced by individual practitioner specialties. But available data appear adequate to allow reasonable characterizations of the likely relationship between payment and cost for broad payer and specialty categories.

By payer, Medicare and private insurers (HMO and non-HMO) pay average rates that substantially exceed costs (meaning fully-allocated overhead and malpractice costs, but not including physician income or salary). This occurs despite private insurance payment rates in Maryland that appear to be substantially below the US average. Medicaid payment rates, by contrast, averaged quite close to cost. Beneath this average, rates exceeded costs for visits only, and were substantially below cost for all other types of care.

By broad specialty category, the gap between payment and cost is smallest for primary care physicians, larger for medical specialists, and largest for surgeons. This mirrors what is known about the relative incomes of these specialty groups, and is generally consistent with the variation in the payment-to-cost ratio by type of service. For Medicare and private payers, the markup of payment over cost for cognitive services remains far smaller than the markup for procedures and tests.<sup>48</sup> For Medicaid, the situation is reversed. With its (relatively) higher rates for visits (and much lower rates for all other services), the variation in payment-to-cost ratios was far lower than for Medicare and private payers.

For an individual physician practice, the degree of financial stress being experienced may depend strongly on physician specialty and payer mix. Increases in the proportion of cases that are Medicaid or charity care narrow the gap between payment and cost for a medical practice. Across the three major physician specialty groups studied, we estimated that moving from a practice with no Medicaid participation to one with one-third Medicaid would reduce physician net income by about 27 percent. The presence of a relatively fixed set of practice and malpractice expenses means that acceptance of Medicaid patients strongly and negatively affect practitioners' net income.

Almost nothing is known about the practice costs of non-physician practitioners except that they generally face lower malpractice insurance costs. Analysis of payment rates, by contrast, shows that private payers typically pay nonphysician practitioners at rates that are modestly to substantially below the rates paid to physicians. This is largely in contrast to Medicare payment policy where, with a few notable exceptions, Medicare pays the same rate to all providers qualified to provide a given medical service.

Maryland already has certain minimum payment laws in force for care delivered to HMO enrollees by non-participating physicians. With some significant caveats, our analysis suggests that HMOs do not routinely comply with these minimum payment rates, and that the rate of compliance does not appear to be increasing. Yet, rates on average are close to the statutory minimums, and strict enforcement of the statute was estimated to raise payments on these non-participating physician bills by just 9 percent. An alternative payment floor based on Medicare rates would be easier to enforce, but would provide dramatically different levels of payment support than does the current floor. In particular, for the key area of emergency room visits, Medicare rates are far below typical private rates, and a floor based on 125 percent of Medicare's rate would appear to be much less stringent than the current payment floor.

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<sup>48</sup> For imaging, the apparent lower markup compared to other services that is shown here is partially an artifact of the way in which imaging services are routinely billed, as discussed above.

Overall, Maryland Medicaid appears to be far more of a concern than either Medicare or the typical private payer in Maryland. While Medicaid fees for visits appear to provide some reasonable markup over average costs, fees for other types of services do not appear high enough to provide any net practitioner income from the service, on average, after paying a fairly pro-rated share of typical overhead costs. This analysis validates ongoing concern about adequate practitioner participation in the Medicaid program, and suggests that any large increase in Medicaid participation might be difficult to achieve without bringing Medicaid rates more in line with other payers' rates in Maryland.

#### 4. Provider Income

##### Physicians

Except where otherwise noted, we examine net income, defined as earnings from medical practice after all expenses but before taxes, and including deferred compensation. Tabulations based on data from the AMA SMS are for patient care physicians who have completed residency but are not employed by the federal government. Where available, data are provided on physician income and rates of change in income for states adjacent to Maryland. The purpose of using these data is to explore whether substantial differences in remuneration exist across nearby geographic areas that might provide an incentive for physicians to relocate across state borders.

Table 17 displays information on physician income in 2000, the most recent year for which data are available. Median and mean net incomes for U.S. physicians were \$175,000 and \$206,000, respectively. As noted above, the AMA data are not available for the State of Maryland. Physician income for the South Atlantic Census division—the smallest geographic unit available – was quite similar to national figures. Median income in the South Atlantic division was third lowest among the nine divisions, but nevertheless was only 4 percent lower than the national median.

**Table 17. Net Income of Physicians, 2000 (\$000s)**

	<u>U.S.</u>	<u>South Atlantic</u>
<b>Median</b>	\$175	\$168
<b>25<sup>th</sup> percentile</b>	\$123	\$120
<b>75<sup>th</sup> percentile</b>	\$250	\$250
<b>Mean</b>	\$206	\$204

Source: AMA: American Medical Association, *Physician Socioeconomic Statistics*, 2003.

Physician income varies substantially by specialty and employment type, as shown in Table 18. Specialties are aggregated into four groups: primary care; medical specialties, surgery, and other. Specialist physicians earned substantially more than primary care providers, and surgical specialists had higher earnings compared to the other specialty groups.

Physicians classified as self-employed had an ownership interest in their medical practice. These physicians earned 33 percent more in 2000 than their salaried counterparts and accounted for 61.5 percent of physicians. Employee physicians accounted for 34.5 percent of physicians and independent contractors for 4.5 percent. There were no significant income differences by employment arrangement between the U.S. overall and the South Atlantic division.

**Table 18. Mean Net Physician Income by Specialty Group and Employment Type, 2000 (\$000s)**

	U.S.	South Atlantic
<b>Specialty Group</b>		
<b>Primary Care</b>	\$142	\$133
<b>Medical Specialties</b>	\$196	\$190
<b>Surgery</b>	\$262	\$274
<b>Other</b>	\$218	\$211
<b>Employment Type</b>		
<b>Self-Employed</b>	\$230 (\$200)	\$227 (\$200)
<b>Employee</b>	\$170 (\$150)	\$163 (\$140)
<b>Indep. Contractors</b>	\$171 (\$160)	--

Note: Medians, when available, are in parentheses.

Source: AMA, *Physician Socioeconomic Statistics*, 2003.

There are two sources of data on physician income for the State of Maryland. One source is the 2000 U.S. Census. Published estimates indicate that mean annual physician earnings in 1999 were \$100,717 in Maryland.<sup>49</sup> According to the Census, physicians nationally earned \$110,504, while earnings in nearby Virginia and Pennsylvania were \$103,989 and \$106,409, respectively. These limited data suggest that earnings in nearby states may be somewhat less, so that one would not expect to see income as an important determinant of loss of Maryland physicians to these states.

<sup>49</sup> U.S. Census estimates include physicians employed by the federal government; in Maryland, the number may be substantial enough to affect the mean, presumably downward. The public use micro-data that are available, however, include top-coding of income for values higher than \$125,000, so published estimates are presented here.

Data are also available from the U.S. Bureau of Labor Statistics Occupational Employment and Wage Estimates (OEWE) for *employee* physicians for selected specialties. These data are shown here in Table 19 for Maryland and the U.S. For four of the six specialties, mean earnings for Maryland physicians are lower than for physicians nationwide; however, in the three-year period shown, the ratios are rising and are above 0.9 in 2001. For the other two specialties, incomes in Maryland are 7 percent higher than nationally for 1999, but this small difference diminishes somewhat by 2001.

By comparison, earnings for employee physicians in Pennsylvania appear to be higher than in Maryland for Family/General Practitioners (10.9 percent), Ob/Gyns (13.8 percent), and pediatricians (8.3 percent). For internists, psychiatrists and surgeons, earnings in Pennsylvania are fairly similar to Maryland (difference of 4 percent or less). Earnings in Virginia are higher for OB/GYNs (16.7 percent) and pediatricians (13.8 percent), and lower for surgeons (-6.2 percent) and psychiatrists (-5 percent). It is difficult to discern how much of the lower income in Maryland is due to the inclusion of federally-employed physicians or whether the relative earnings of employee physicians across states is comparable to the relative earnings of self-employed physicians across jurisdictions. While mean earnings for employee physicians in some specialties are lower in Maryland than in Pennsylvania or Virginia, the change in earnings in Maryland over the most recent years for which data are available has outpaced that in the other states (with the exception of surgeons), as shown below in Table 20.

**Table 19. Earnings of Selected Specialist Employee Physicians, U.S. and Maryland, 1999-2001 (\$000s)**

	1999	2000	2001
<b>Fam/GenP</b>			
MD	\$83	\$94	\$100
US	104	108	110
Ratio	0.8	0.9	0.9
<b>Internist</b>			
MD	116	114	119
US	123	123	127
Ratio	0.9	0.9	0.9
<b>OB/Gyn</b>			
MD	104	114	121
US	135	133	133
Ratio	0.8	0.9	0.9
<b>Pediatrician</b>			
MD	93	92	109
US	113	117	117
Ratio	0.8	0.8	0.9
<b>Psychiatrist</b>			
MD	111	104	118
US	104	108	114
Ratio	1.1	1.0	1.0
<b>Surgeon</b>			
MD	145	144	142
US	136	137	137
Ratio	1.1	1.1	1.0

Note: Ratio is the MD-U.S. ratio of earnings.

Source: U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment and Wage Estimates, <http://www.bls.gov/oes/>

**Table 20. Percentage Change in Earnings of Selected Specialist Employee Physicians, Maryland, Pennsylvania, and Virginia, 1999 to 2001.**

	Maryland	Pennsylvania	Virginia
<b>FP/GP</b>	21.1%	9.5%	2.3%
<b>Internist</b>	3.1	-3.6	-7.6
<b>OB/GYN</b>	16.3	-0.2	2.1*
<b>Pediatrician</b>	17.5	0.8	2.8
<b>Psychiatrist</b>	6.6	11.7	-14.2
<b>Surgeon</b>	-2.0	0.5	-3.5

\* 2000-2001

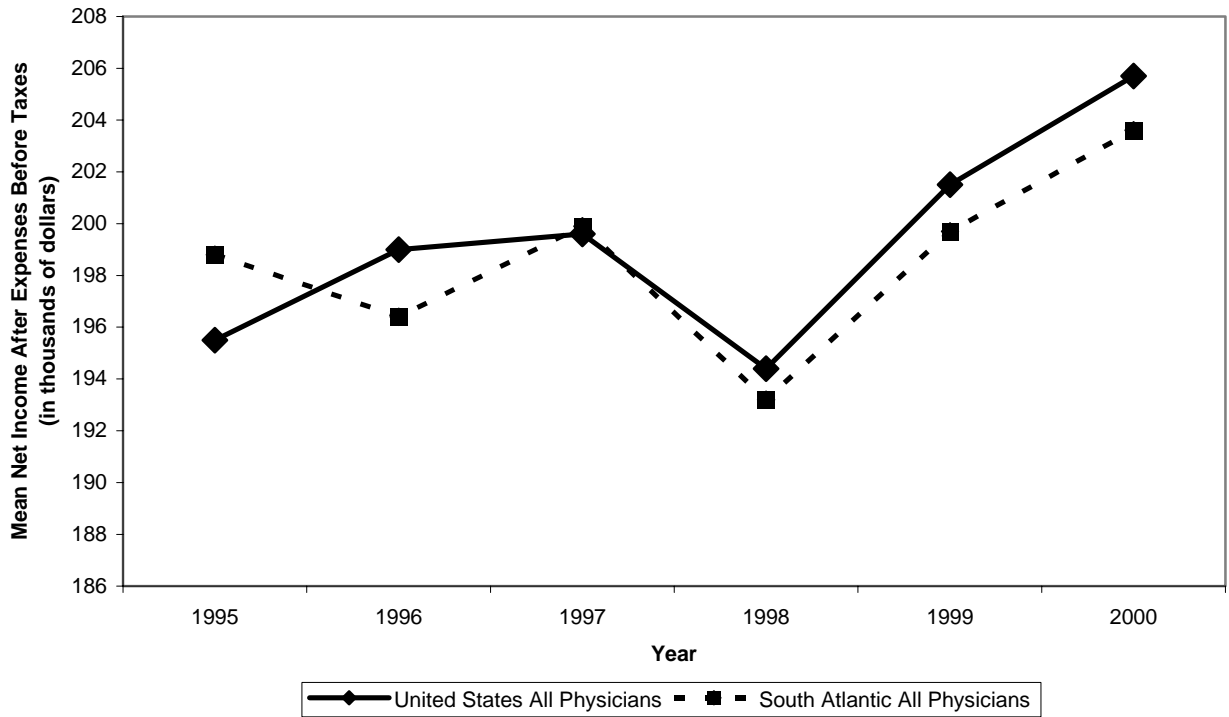
Source: U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment and Wage Estimates, <http://www.bls.gov/oes/>.

Data on physician income over time are from the AMA SMS. Income increased somewhat between 1995 and 1997, dropped off sharply in 1998, and then rose substantially between 1998 and 2000 for the average U.S. physician (Figure 8). The trend overall shows an increase of about 5.2 percent in nominal income over the 5-year period. The trend in the South Atlantic division is quite similar, though with a higher starting point and lower finishing point, the increase over the period is smaller (2.4 percent). For the most recent period from 1998 to 2000, these data show a nominal annual change of 4.6 percent for all physicians nationwide and a change of 2.5 percent for the South Atlantic division. The real annual changes were 1.8 percent and – 0.3 percent, respectively.

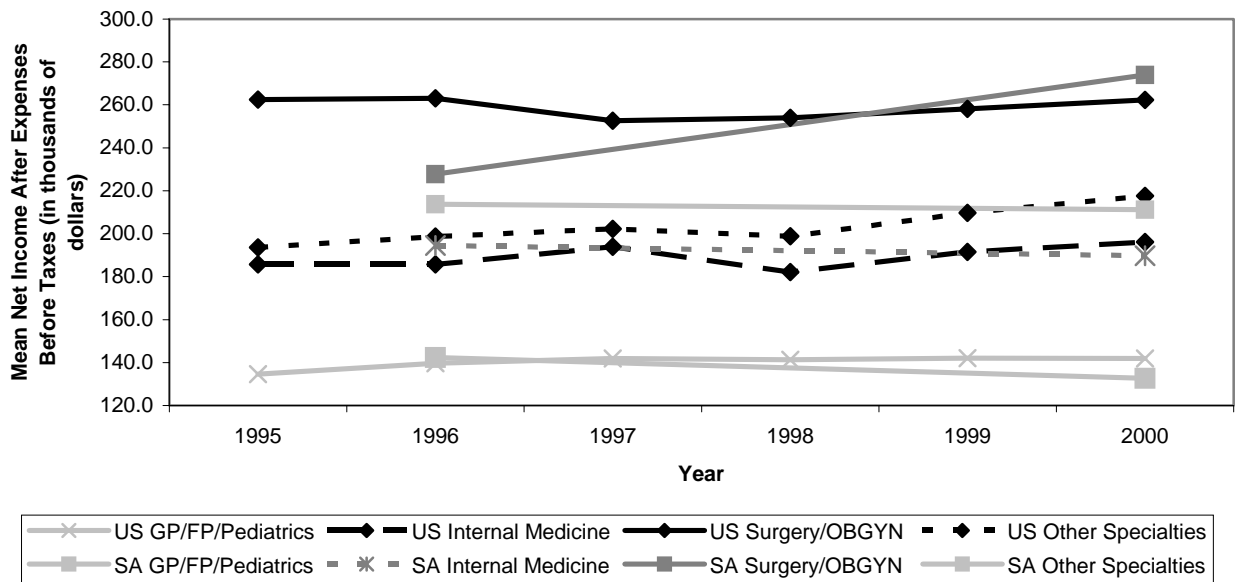
Trends in physician income for the four specialty groupings are shown in Figure 9. For the U.S., income for surgical specialties fell somewhat between 1995 and 1997 and then showed a slight upward trend. Income for primary care physicians increased most between 1995 and 1996, with a slight upward movement in subsequent years. Medical specialties and other specialties showed a more noticeable upward trend between 1998 and 2000. For the South Atlantic division, data are only available for 1996 and 2000. There was a marked increase in income for surgical specialties, income for medical and other specialties was fairly flat, and primary care income showed a slight decline.

Because the most recent AMA data available are for 2000, we provide some information from the Medical Group Management Association (MGMA) Physician Compensation and Production Survey for recent years. The MGMA data are likely to differ in absolute level from the AMA data because they include only group practices; it is not clear whether or in what direction this would affect the rate of change. However, these data are used here to help in defining a general direction of physician income for the last several years.

**Figure 8. Physician Income, 1995 to 2000**  
All Physicians, U.S. and South Atlantic

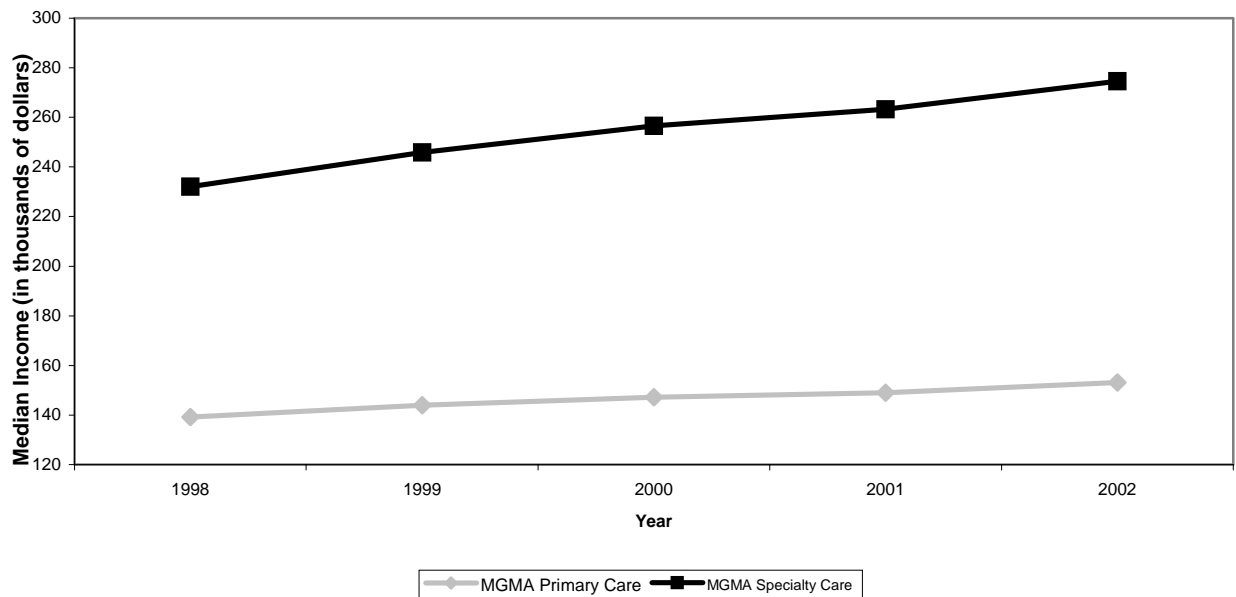


**Figure 9. Physician Income, 1996 and 2000**  
By Specialty Group, U.S. and South Atlantic



For the period 1998 to 2000 the MGMA data show an upward trend, with an annual percentage change of 5.2 percent for surgical specialties and an annual percentage change of 2.8 percent for primary care physicians (Figure 10).<sup>50</sup> Since the specialty categories are not directly comparable we compare these two estimates with the 4.6 percent annual change for all physicians from the AMA data for 1998 to 2000. From 2000 to 2002 there are no AMA data available but the MGMA data show a continued upward trend—3.5 percent annually for surgical specialties and 2.2 percent annually for primary care physicians. The annual change is somewhat larger between 2002 and 2001 compared to 2000 to 2001.

**Figure 10. MGMA Median Physician Income, 1998-2002**



<sup>50</sup> Table A, page 18, Medical Group Management Association, *Physician Compensation and Production Survey*, 2003.

## Selected Non-Physician Practitioners

**Podiatrists.** The primary source of income for podiatrists is a regular survey conducted by the American Podiatric Medical Association (APMA). Data for 1995, 1997, and 2001 are shown here.

**Table 21. Net Income for Podiatrists, U.S. (\$000s)**

	<b>1995</b>	<b>1997</b>	<b>2001</b>
<b>Mean</b>	\$108	\$111	\$134
<b>Median</b>	\$ 86	\$ 86	\$113

Source: American Podiatric Medical Association (APMA): from Al Fisher Associates, Inc. "2002 Podiatric Practice Survey: Statistical Results," Journal of the American Podiatric Medical Association, Vol. 93, No. 1, January/February 2003.

While the survey provides no specific information for Maryland, mean net income for podiatrists practicing in the South was slightly higher than the national average at \$142,000 for 2001. The only available data for Maryland for all podiatrists are from the 2000 Census; from that source, median income for podiatrists for 1999 was \$101,944.<sup>51</sup>

The comparable figure for the U.S. as a whole is \$74,528; for Pennsylvania and Virginia, census-reported earnings for podiatrists were considerably lower than in Maryland at \$76,000 and \$57,237, respectively. While the Maryland estimate fits reasonably with the APMA survey data, the U.S. figure (as well as the Pennsylvania and Virginia figures) seems quite low. Data from the Bureau of Labor Statistics on *employee* podiatrists only indicate that, for 2001, mean earnings were \$94,500 nationally and \$92,110 in Maryland,<sup>52</sup> suggesting that earnings for podiatrists in Maryland are comparable to those in the U.S. overall.

**Chiropractors.** There are two sources of data on the income earned by chiropractors. The U.S. Census indicates that median income in 1999 for Maryland chiropractors was \$51,601 and for the U.S. was \$51,123. (Pennsylvania earnings were \$55,950 and Virginia earnings were \$45,833.) Data from the Bureau of Labor Statistics for *employee* chiropractors only indicates mean earnings of \$70,930 for chiropractors in the US.<sup>53</sup> This figure is clearly much higher than the Census figure, particularly given that employee chiropractors might be likely to earn less than self-employed practitioners. For 2001, BLS data show Maryland chiropractors earning 23 percent more than US chiropractors (\$94,460, on average, compared to at \$76,870).

<sup>51</sup> <http://www.census.gov/hhes/income/earnings/call2mdboth.html>

<sup>52</sup> <http://www.bls.gov/oes/>

<sup>53</sup> <http://www.bls.gov/oes/>

**Physical Therapists.** The NCS provides data on the mean earnings of physical therapists.<sup>54</sup> These data are for physical therapist employees only and do not include the self-employed. Additional data on median earnings for physical therapists comes from the U.S. Census and the Bureau of Labor Statistics occupational wage estimates. These latter estimates are substantially higher, with physical therapist employees earning \$61,060, on average, in Maryland and \$59,130 nationally in 2001.<sup>55</sup>

**Table 22. Net Income for Physical Therapists (\$000s)**

	1999	2000	2001	2002
<b>U.S. (mean)<sup>a</sup></b>	--		\$44.8	\$46.2
<b>U.S. (mean)<sup>b</sup></b>	\$58.4	\$57.5	\$59.1	--
<b>U.S. (median)<sup>c</sup></b>		\$42.2		--
<b>South Atlantic (mean)<sup>a</sup></b>	--		--	\$46.7
<b>Maryland (median)<sup>b</sup></b>	\$43.2		--	--
<b>Maryland (mean)<sup>b</sup></b>	\$57.1	\$59.0	\$61.1	--

Notes: Both part-time and full-time workers are included. NCS and BLS data are for employees only.

Source: <sup>a</sup>National Compensation Survey, <http://www.bls.gov/ncs/ocs/sp/>.

<sup>b</sup>Bureau of Labor Statistics, <http://www.bls.gov/oes/>.

<sup>c</sup>2000 Census, <http://www.census.gov/hhes/income/earnings/earnings.html>.

**Psychologists.** Data on median income for psychologists in the U.S. is available from the MGMA compensation survey.

**Table 23. Median Income for Psychologists (\$000s)**

	1998	1999	2000	2001	2002
<b>All U.S.</b>	\$65.5	\$70.5	\$67.9	\$69.3	\$71.9

Source: Medical Group Management Association, *Physician Compensation and Production Survey*, 2003 Report based on 2002 Data, Table A, page 18.

<sup>54</sup> Mean income is derived by multiplying Mean Hourly Earnings by Mean Weekly Hours. Both full-time and part-time employees are included. <http://www.bls.gov/ncs/ocs/sp/ncbl0539.pdf>, Table 3, page 5; <http://www.bls.gov/ncs/ocs/sp/ncbl0449.pdf>, Table 3, page 13, and <http://www.bls.gov/ncs/ocs/sp/ncbl0549.pdf>, Table 3, page 5.

<sup>55</sup> <http://www.bls.gov/oes/>

**Nurse Anesthetists.** Data on median income for nurse anesthetists in the U.S. is available from the MGMA compensation survey.

**Table 24. Median Income for Nurse Anesthetists (\$000s)**

	1998	1999	2000	2001	2002
<b>All U.S.</b>	\$84.9	\$92.9	\$95.6	\$109.3	\$110.4

Source: Medical Group Management Association, *Physician Compensation and Production Survey*, 2003 Report based on 2002 Data, Table A, page 18.

**Physician Assistants.** Data on median income for physician assistants in the U.S. is available from the American Academy of Physician Assistants (AAPA) and the MGMA compensation survey. The AAPA collects data from physician assistants (members and non-members) on an annual basis. The NCS provides data on the earnings of physician assistant employees.<sup>56</sup> There is no data specific to the earnings of physician assistants in Maryland, but income data from the NCS pertaining to employee PAs is comparable between the U.S. overall and the South Atlantic division. Nationally, according to the AAPA data, incomes for PAs have increased 17 percent between 1998 and 2003.

**Table 25. Median Income for Physician Assistants (\$000s)**

	1998	1999	2000	2001	2002	2003
<b>All U.S.<sup>a</sup></b>						
<b>Surgical</b>	\$71.0	\$70.5	\$72.0	\$71.6	\$73.3	
<b>Prim. Care</b>	\$61.4	\$60.1	\$64.8	\$65.7	\$69.3	
<b>All U.S.<sup>b</sup></b>	\$61.8	\$64.8	\$65.2	\$67.7	\$69.6	\$72.5
<b>All U.S.<sup>c</sup></b>	--	--	--	\$66.5	\$64.7	
<b>South Atlantic<sup>c</sup></b>	--	--	--	--	\$64.8	

Note: Data from the National Compensation Survey are mean income estimates and are for employees only. Mean is derived by multiplying Mean Hourly Earnings by Mean Weekly Hours. Both full-time and part-time employees are included.

Source: <sup>a</sup> Medical Group Management Association, *Physician Compensation and Production Survey*, 2003 Report based on 2002 Data, Table A, page 18.

<sup>b</sup> 2003 American Academy of Physician Assistants Census Report, <http://www.aapa.org>

<sup>c</sup> National Compensation Survey, BLS <http://www.bls.gov/ncs/ocs/sp/ncb10539.pdf>, <http://www.bls.gov/ncs/ocs/sp/ncb10449.pdf> and <http://www.bls.gov/ncs/ocs/sp/ncb10549.pdf>.

<sup>56</sup> Mean income is derived by multiplying Mean Hourly Earnings by Mean Weekly Hours. Both full-time and part-time employees are included. <http://www.bls.gov/ncs/ocs/sp/ncb10539.pdf>, Table 3, page 5; <http://www.bls.gov/ncs/ocs/sp/ncb10449.pdf>, Table 3, page 13, and <http://www.bls.gov/ncs/ocs/sp/ncb10549.pdf>, Table 3, page 5.

## Summary

Overall, physician incomes in Maryland seem to be on a par with neighboring states, the South Atlantic division as a whole, and the U.S.. While some data indicate that Maryland physician incomes are somewhat lower than the nation as a whole, this may be due in part to limitations in the data. It is difficult to tell to what extent lower income might be due to inclusion of federal physicians who are not delivering patient care,<sup>57</sup> or the extent to which data pertaining to employee physicians is applicable to self-employed physicians. However, even if physician incomes in Maryland are somewhat lower, trend data indicate that Maryland physicians are catching up. Given the large supply of physicians in Maryland relative to other states (discussed in the next section), there appears to be little cause for concern about physician out-migration. While it is difficult to project income trends for Maryland, nationally there is some indication that physician income has been rising at least through 2002. As for other health care providers, there is much less information available on earnings. From what is available, it appears that incomes for Maryland practitioners are sometimes higher and sometimes lower than nationally, but generally in keeping with national norms.

## 5. Provider Supply

### Physicians

In this section, data are presented on provider supply for physicians, chiropractors, and physician assistants. These data were obtained using the Area Resource File (ARF); more specific information on the origins of these data is provided below.

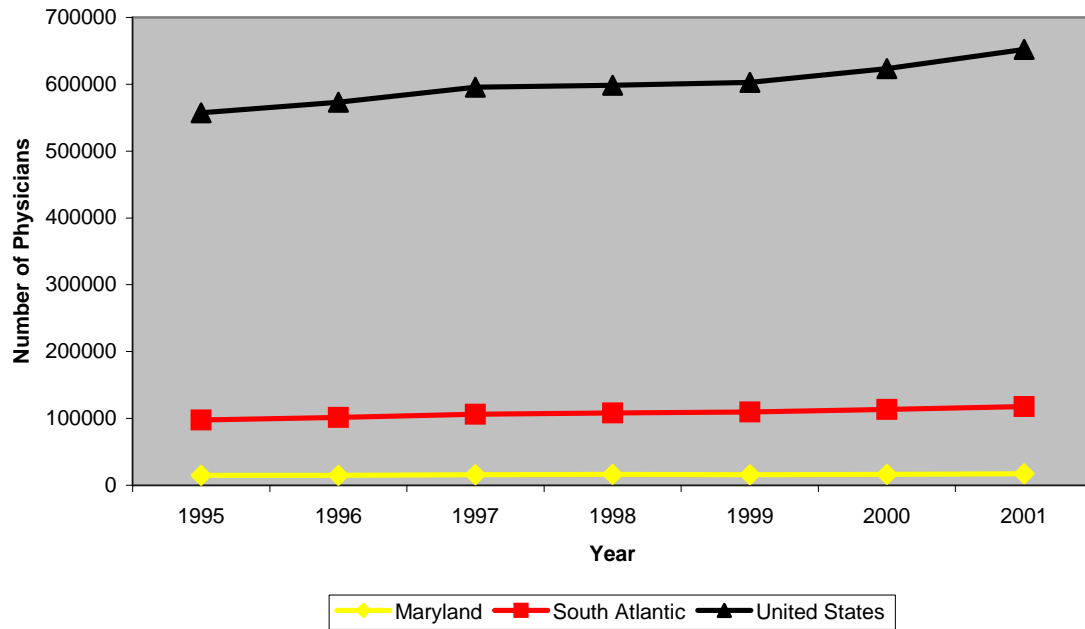
Area Resource File data on physician supply are from the MasterFile listing of physicians nationwide maintained by the AMA. Counts are of non-federal physicians who provide direct patient care. Population data is from the U.S. Bureau of the Census. While state licensure data on providers may provide more accurate counts of practicing physicians than the data presented below, there is no reason to suspect that *trend* data from the ARF are misleading. Furthermore, there is no reason to expect that the relationship between licensure data and ARF counts varies systematically across the states.

Figure 11 shows physician supply per 100,000 population from 1995 to 2001, for the U.S., the South Atlantic division, and Maryland. Over this period, physician supply has grown more rapidly in the South Atlantic division than in the U.S. overall, and less so in Maryland. On a per capita basis, growth has been slightly slower in Maryland (6.7% from 1995 to 2001 compared to 8% in the US overall). More importantly, however, as of 2001 the number of physicians per population in Maryland was 38 percent higher than in the U.S. (317 physicians per 100,000 population in Maryland vs. 229 in the U.S.). In fact, as of 2001, Maryland ranked third in the nation in terms of the number of patient care physicians per population.

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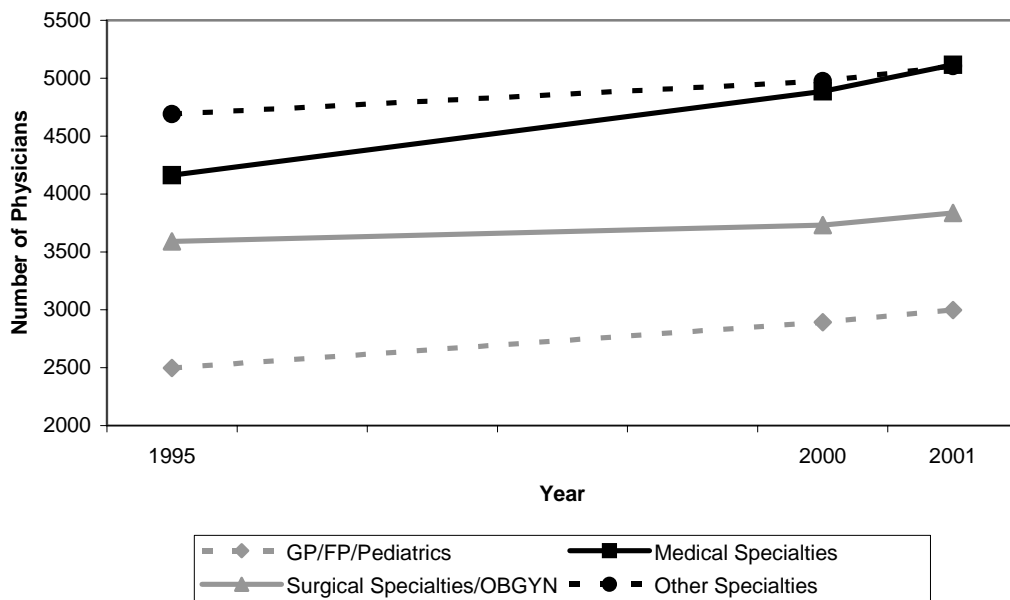
<sup>57</sup> One of the primary sources of data on Maryland physicians was the Census. Using published data, it was not possible to exclude federally-employed physicians.

Figure 11. Nonfederal Patient Care Physician Supply, 1995 to 2001



The supply of physicians per population in Maryland by specialty group is shown in Figure 12. Over the same period of 1995 to 2001, supply of primary care physicians and medical specialties increased substantially (20 and 23 percent, respectively). Surgical and other specialties increased at lower rates (7 and 9 percent, respectively). On a per capita basis, the supply of primary care physicians and medical specialties increased 12 and 14 percent, respectively. The supply of physicians in the surgical specialties remained flat while the supply for other specialties grew by only 2 percent.

**Figure 12. Nonfederal Patient Care Physician Supply, 1995 to 2001, By Specialty Group, Maryland**



Legislative interest in the number of physicians practicing in Maryland relative to the size of the population is due largely to concerns about access to health care services. From the statistics presented, it seems that the current supply of physicians is more than sufficient to serve Maryland's residents. When examining the number of providers, one also needs to be cognizant of the flow of patients across state borders as well as the potential for loss of physicians to other locations. Patient flow across state borders involves both the use of out-of-state health care by Maryland residents as well as the use of Maryland providers and facilities by out-of-state residents. Both of these phenomena are common, particularly in the Washington, DC metropolitan area, as well as along the borders with Pennsylvania and Delaware. In terms of nearby states' ranking with respect to the number of patient care physicians per population, only West Virginia is ranked in the lower half of states nationwide (ranked 31st). The District of Columbia is ranked first, Pennsylvania tenth, Virginia twelfth, and Delaware twenty-first.<sup>58</sup> Thus, there would seem to be an adequate supply of physicians in the geographic areas surrounding Maryland.

As for physician out-migration, it is difficult to assess. In the previous section, data were presented indicating that higher incomes in neighboring states were not likely to be a substantial draw for Maryland physicians. Factors that may affect the future supply of physicians also need to be considered. A recent study of physician location decisions related to medical school enrollment and location of graduate medical education (GME) indicate that the latter is a more important predictor of where a physician chooses to

<sup>58</sup> American Medical Association, *Physician Characteristics and Distribution in the US, 2003-2004* Edition, Table 5.19, page 340.

practice.<sup>59</sup> Nationwide, 39 percent of graduating physicians are now practicing in state and 47 percent of physicians who completed their most recent GME in state are now practicing in state. These figures are 27 percent and 41 percent, respectively, for Maryland. Thus, Maryland retains a lower than average percent of its medical school graduates and residents.<sup>60</sup> In addition, figures from Maryland's two medical schools indicate downward trends in residencies for certain specialties that may be cause for concern. Specifically, the number of OB/Gyn residencies was markedly low in 2003, though it is difficult to tell if this is a temporary fluctuation or a more permanent level.<sup>61</sup>

Finally, if there are concerns about the adequacy of physician supply in specific geographic areas, the potential for additional Health Professional Shortage Area (HPSA) designations should be explored. Within geographic HPSAs, bonus payments of 10 percent are available for Medicare-reimbursable physician services.<sup>62</sup>

### **Selected Non-Physician Providers**

**Chiropractors.** The number of chiropractors and the supply per 100,000 population are provided below for Maryland, the South Atlantic division, and the country as a whole. The per capita supply is substantially lower in Maryland, less than half that for the U.S. With no trend data available, it is not possible to assess whether this is a recent phenomenon or a long-standing situation. It is worth noting, however, that income data presented in the previous section indicates that Maryland chiropractors are doing as well as their counterparts elsewhere. The Census data show comparable earnings for Maryland chiropractors and the U.S. overall with chiropractors in Pennsylvania earning somewhat more, and those in Virginia somewhat less. Thus, it does not appear that potential income is contributing to the smaller supply. There is no available information with which to determine if access to chiropractic services is an issue for Maryland residents.

**Table 26. Number of Chiropractors, 2001**

	<b><u>Total</u></b>	<b><u>Per 100,000 Pop.</u></b>
<b>Maryland</b>	543	10.1
<b>South Atlantic</b>	9,949	18.9
<b>U.S.</b>	66,790	23.5

Source: Area Resource File. The ARF data were prepared by the Palmer Center for Chiropractor Research and compiled from state boards or state chiropractic associations and supplemented with proprietary mailing lists.

<sup>59</sup> Henderson H, Farmer C, and Szwarc S, "Practice Location of Physician Graduates: Do States Function as Markets?" National Conference of State Legislatures Institute for Primary Care and Workforce Analysis, January 2003.

<sup>60</sup> The number of residencies at the University of Maryland Medical School is declining so this may have some impact on future physician supply though the extent of the impact is not likely to be large.

<sup>61</sup> As of 2001, the per capita number of obstetrician/gynecologists providing patient care in Maryland was higher than in Virginia and substantially higher than in Pennsylvania.

<sup>62</sup> Medicare Incentive Payments for Physician's Services (Public Law 100-203, Section 4043, as amended); <http://bhpr.hrsa.gov/shortage/hpsaguidepc.htm>

**Physician Assistants.** The number of physician assistants (PAs) in 1998, 1999, 2001, and 2004 are provided below for Maryland, the South Atlantic division, and the country as a whole, with the 2004 projection being for *practicing* PAs and therefore smaller and not strictly comparable to the other figures. There is a sharp increase in the number of physician assistants between 1999 and 2001 at all geographic levels. It is likely that this is related to changes in reporting rather than an actual increase in supply. Both the 2001 and 2004 supply per 100,000 population are also presented; again, the 2004 figure is for practicing PAs only. Either looking at all PAs or practicing PAs, on a per population basis, Maryland has a substantially larger supply of physician assistants than either the South Atlantic division or the U.S. The per population supply is similar to that in Pennsylvania (23.3) and much higher than that in Virginia (12.5). Maryland is ranked fifteenth nationally in terms of the number of per capita physician assistants.

**Table 27. Number of Physician Assistants**

	<b>1998</b>	<b>1999</b>	<b>2001</b>	<b>Per Pop 2001</b>	<b>Per Pop 2004*</b>
<b>Maryland</b>	792	808	1,526	28.4	25.1
<b>South Atlantic</b>	5,589	6,024	11,160	21.2	--
<b>U.S.</b>	26,233	28,433	52,845	18.6	17.2

\* Refers to practicing PAs rather than total, American Academy of Physician Assistants, Division of Data Services & Statistics.

Note: All data are projections and may include non-practicing PAs. Inclusion of the latter may artificially inflate the number by as much as 25 percent.

Source: Area Resource File. The ARF data were prepared by the American Academy of Physician Assistants (AAPA).

## 6. Conclusions

A central finding of this study is that payments from private payers in Maryland and from the Medicare program are adequate in covering the cost of care. Estimates of the provider “margin” – i.e., the difference between payment levels and the non-physician expenses of practice and the malpractice premium – are imprecise because, as noted above, data for this analysis were limited and data that were available to the project team are of unknown quality. Our estimates (Table 9) are consistent in magnitude with payment system parameters that have been used to structure the Medicare physician payment system. In the aggregate, we estimate that about 60 percent of the average payment from private payers and Medicare is used to cover practice expense and the malpractice premium, leaving the remaining 40 percent to cover current and deferred physician earnings. In the calculation of Medicare Fee Schedule payments, it is assumed that about 46 percent of practice revenues would be used to cover the non-physician costs of care. The difference between the Maryland and national averages was largely explained by private insurance payment rates in Maryland that are below the national average.

A disturbing finding, but one consistent with anecdotal evidence often heard, is that Medicaid payments overall are not adequate. Medicaid payments are not sufficient to cover non-physician and physician expenses, especially for tests and procedures. Implications of this finding are troubling. First, while private and Medicare payments are adequate, there may not be enough “slack” in these payment levels to continue to cross-subsidize Medicaid services at current levels. This will be especially true in the near future if Medicare payments do not keep pace with the cost of practice, or if private rates fail to rise, as they did from 1999 to 2001.

Evidence summarized above suggests that the volume of uncompensated care provided by physicians is declining. This trend is likely to continue so long as Medicaid services do not cover the full costs of care and private payment rates in Maryland – already lower than in the U.S. overall – continue to decline. In commenting on apparent pressures of managed care on fee levels and the provision of charity care, it has been noted that “[A]ny cost controls – including those from public payers – that squeeze provider revenues might have the same result.”<sup>63</sup> If the rate of uninsurance continues to increase and physicians are reluctant to provide uncompensated care, “there will be nowhere for [the uninsured] to go... The safety net is simply not large enough to absorb the uninsured now being seen by internists and other private practitioners.”<sup>64</sup>

Another implication of findings of this study is that payment adequacy and indicators of access to care should be monitored over time. Observed levels of payment adequacy represent a confluence of trends in professional expenses and potential gains in practitioner productivity. Evidence presented in Section 2 above suggests that professional expense will, at best, remain stable but at worst will increase in the near future as the cost of labor increases and malpractice premiums increase. There is some evidence that payment rates have fallen recently (e.g., recent trends in Medicare fees), yet income of physicians continues to increase, albeit at rates that are less than in the past. The sum total of this evidence suggests that physician productivity has improved. Declines in professional expenses during the late 1990s suggest that physicians have found methods of cutting costs. Productivity gains may also be realized with increases in service volume and increases in the volume of RVU, or resource-intensive, services. However, there are limits to cost-cutting and productivity gains. To date, the per capita supplies of providers in Maryland have not decreased relative to the nation as a whole. Deterioration in the adequacy of private and Medicare payment levels may ultimately begin to adversely affect access to care.

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<sup>63</sup> Quote from Paul Ginsburg, “Two Studies Show Managed Care Cost Pressures Threaten Access to Care for Uninsured,” *News Release*, Center for Studying Health System Change, March 23, 1999.

<sup>64</sup> Fairbrother et al., 2003, p. 223.

## **Appendix: Summary of Methods for Fully-Allocated Practice Expense and Malpractice Costs.**

Chapter 3 of this report presents a comparison of payments to the average cost of care, where cost includes practice costs and malpractice expenses, but not the practitioners' income or salary. This appendix briefly describes the methods used to calculate a fully-allocated cost for each of the roughly 7,000 Current Procedural Terminology (CPT) codes describing the services provided by physicians and other practitioners.

The challenge of this research was to take published information on costs and volume of services *per physician*, and generate an estimate of costs *for each service* that physicians perform. The method used was to allocate the costs to the services based on the practice expense and malpractice expense relative value units (RVUs) assigned to each service as part of the Medicare Fee Schedule. The steps of the methodology were the following:

1. For each specialty, determine the average practice expense and malpractice expense per physician in 2002. Data on professional expenses – the sum of practice expenses and malpractice premium per physician – were taken from the American Medical Association (AMA) Socioeconomic Monitoring System (SMS) survey for 2001. For 2001, for example, the average self-employed general or family practice physician had nearly \$200,000 in combined practice expense and malpractice premium. These data were available for a subset of specialties for which the AMA received an adequate number of responses to their survey. These data were inflated to approximated 2002 levels using the increase in the Medicare Economic index from 2001 to 2002.
2. For each specialty, determine how many RVUs of care the typical physician performs in a year. Data on total RVUs produced by the average physician, by specialty, were taken from the Medical Group Management Association (MGMA) Compensation Survey, and reflect average physician productivity in 2002. For example, MGMA data indicate that the average general/family practice physician performed almost 8,000 total RVUs of care, including work, practice expense, and malpractice RVUs.
3. To allocate costs out to individual procedures, we needed to know practice expense and malpractice RVUs, not total RVUs. The Maryland Medical Care Data Base (MCDB) was used to determine what fraction of each specialty's total RVUs was attributable to practice expense and malpractice RVUs. This database contains claims data for most practitioner services provided to Maryland residents in 2002 that were paid by private insurers. Medicare RVU information was merged to the claims, and the RVUs were summarized by specialty to determine the average fraction of total RVUs, for each specialty, that were attributable to practice expense and malpractice costs. Based on the MCDB data, for example, we estimated that for the average general/family practice physician, 3,990 out of the total of 8,000 RVUs were practice expense and malpractice RVUs.

4. For each physician specialty, total practice expense and malpractice dollars per physician were divided by total practice expense and malpractice RVUs per physician. This step yields a cost-per-RVU conversion factor for each specialty. At this step, several specialties yielded implausible or outlier values for this cost-per-RVU figure. In general, these outlier values appeared to arise from differences in definition of specialty categories used by the AMA and the MGMA, or from small numbers of observations (statistical outliers) in either the AMA or MGMA surveys. Extreme high or low values for these cost-per-RVU figures were replaced with the median value for all physicians or for a broad class of physicians.

On average, the only specialty for which this imputation mattered was general internal medicine. Based on AMA and MGMA data as reported, cost per RVU for general internal medicine physicians was nearly twice as large as the estimated average for all physicians. Not only did this seem implausible, but it mattered empirically: General internal medicine is the most widely-reported physician specialty in the MCDB. This high value of cost per RVU appeared to be due to a mismatch between AMA and MGMA definitions of general internal medicine. Rather than use this outlier cost value, we assigned the value for general and family practice physicians to the general internal medicine physicians. This had a modest impact on the results. If we had used the general internal medicine data as reported, we would have estimated that private payers' rates were 159 percent of cost. Instead, by assuming that general internal medicine costs were similar to general/family practice costs, we estimated that private payers' rates were 169 percent of cost.

5. For a given specialty, the cost of any given service was calculated as practice expense plus malpractice RVUs for that service, times that specialty's cost-per-RVU conversion factor.

6. The average cost of each service was calculated as the average cost of that service for all the specialties providing that service, weighted in proportion to that specialty's share of the overall service volume. Weights were calculated from services paid for by private insurers in Maryland. Thus, a service provided mainly by ophthalmologists, for example, reflected an allocation of ophthalmologists' costs. The average cost of an office visit, by contrast, reflected the (weighted) average of all specialties that provided office visits.

7. The cost per service was compared to various levels of payment per service. We compare the estimated cost for each service to typical payments from private, Medicare, and Medicaid payers in Maryland. Comparisons are by aggregates of similar services; we used the Berenson-Eggers Type-of-Service (BETOS) classification, which is the system that Medicare uses to group physicians' services into clinically meaningful groups. Medicare rates were calculated from the 2002 Medicare fee schedule. Medicaid rates reflect the Maryland Medicaid physician fee schedule. Private rates were calculated from the Maryland Medical Care Data Base.

All non-physician practitioners and certain physician specialties were omitted from this process. Non-physician practitioners were omitted because we found no systematic information on non-physician practitioners' practice costs. In addition, anesthesiologists

and nurse anesthetists were removed from the MCDB prior to calculating private payment rates, and so are not present in this analysis. These specialties had to be removed to avoid confusing the separate payment levels for surgery and the anesthesia associated with the surgery.

Finally, there was substantial variation in the cost and payment data for individual specialties that we attribute either to small sample sizes (statistical variation) in the underlying survey data, or to mismatches in specialty definition between the two survey data sources. For that reason, we did not tabulate data for specific specialties, but instead only tabulated data for large groups of specialties. The composition of these aggregate specialty groups is given below.

<b>Specialty Groups Used in This Analysis</b>	
<b>Primary Care</b>	Family Practice, General Practice, Internal Medicine, Pediatrics
<b>Medical Specialists</b>	Allergy & Immunology, Cardiology, Endocrinology Medicine, Gastroenterology, Geriatrics, Hematology, Infectious Disease, Nephrology, Oncology, Pulmonary Disease, Rheumatology
<b>Surgeons</b>	General Surgery, Hand Surgery, Obstetrics/Gynecology, Ophthalmology, Orthopedic Surgery, Otolaryngology, Peripheral Vascular Disease/Surgery, Plastic Surgery, Proctology, Thoracic Surgery, Urology
<b>Other</b>	Dermatology, Emergency Medicine, Neurology, Nuclear Medicine, Pathology, Physical Medicine & Rehabilitation, Psychiatry, Radiology